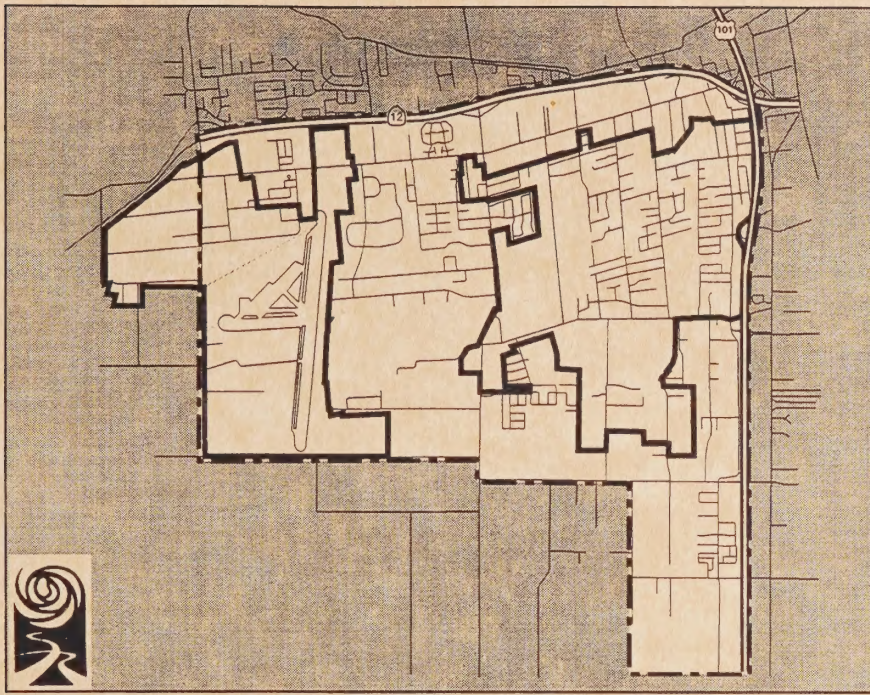




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FINAL SUBSEQUENT ENVIRONMENTAL IMPACT REPORT
(REVISED DRAFT SUBSEQUENT EIR)

SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN

PREPARED FOR:
CITY OF SANTA ROSA HOUSING AND REDEVELOPMENT

PREPARED BY:
EIP ASSOCIATES

MAY 2000

SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN
SUBSEQUENT ENVIRONMENTAL IMPACT REPORT
(FINAL - REVISED DRAFT SUBSEQUENT EIR)

SCH #99102091

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May, 2000

Note: This document, *Southwest Santa Rosa Redevelopment Plan, Subsequent Environmental Impact Report (Final – Revised Draft Subsequent EIR)*, contains certain specified text revisions as a result of preparing Responses to Comments on the Draft Subsequent EIR of March 2000. In addition, there are other minor changes to the text initiated by City of Santa Rosa Department of Community Development and Redevelopment Agency staff. The staff-initiated text changes are provided for informational and clarification purposes and do not change any of the substantive findings of the Subsequent EIR concerning impacts and mitigation measures. Text material that is added to the Subsequent EIR is denoted with a “redline”, like this, while material that is deleted from the Subsequent EIR is denoted with a “strikeout”, ~~like this~~.

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INTRODUCTION

PURPOSE OF SUBSEQUENT EIR (SEIR)

This Subsequent Environmental Impact Report (SEIR), for the proposed Southwest Santa Rosa Redevelopment Plan project, has been prepared in conformance with the provisions of the California Environmental Quality Act (CEQA) Guidelines as amended.¹ The purpose of this SEIR is to provide the City of Santa Rosa, Santa Rosa Redevelopment Agency, public agencies and the public in general with detailed information about the environmental effects of the proposed Redevelopment Plan project, to examine and institute methods of mitigating any adverse environmental impacts should the Redevelopment Plan project be approved for implementation, and to consider alternatives to the Redevelopment Plan project as proposed. The law itself (CEQA) provides that public agencies should not approve projects as proposed until all feasible means available have been employed to substantially lessen the significant environmental effects of such projects. "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time taking into account economic, environmental, social and technological factors.²

The Final SEIR will be considered by officials of the City of Santa Rosa Redevelopment Agency, acting as Lead Agency under CEQA, and by the City Council of the City of Santa Rosa and Board of Supervisors of Sonoma County acting as Responsible Agencies, prior to any decisions being made on the proposed Redevelopment Plan project. The SEIR specifically addresses the Redevelopment Plan project as proposed. Certification of the Final SEIR by the Redevelopment Agency as complete and adequate in conformance with CEQA does not grant any approvals to the Redevelopment Plan project. Adoption of the Redevelopment Plan project will be considered by the City of Santa Rosa City Council only if approvals of the Redevelopment Plan by the Santa Rosa Redevelopment Agency and the Sonoma County Board of Supervisors, have been obtained after considering the recommendations of the Planning Commission and the Project Area Committee and certification of the SEIR.

BACKGROUND

In 1993 - 1994, an Environmental Impact Report (EIR) was prepared that addressed the environmental impacts of implementing the Southwest Area Plan.³ The EIR included an environmental analysis of 35 potential individual housing and mixed use development projects in addition to the environmental analysis of implementing the Southwest Area Plan. While the previous EIR was a Master EIR, time limitations on its use have expired and with the proposed adoption of a Redevelopment Plan for portions of the Southwest Plan Area, a new EIR is required. Section 15180 of the CEQA Guidelines requires that all public and private activities or undertakings pursuant to or in furtherance of a redevelopment plan constitute a single project, and the EIR in connection with a redevelopment plan shall be submitted in accordance with Section 33352 of the Health and Safety Code. In addition, Section 15179 of the Guidelines specifies for a Master EIR that is more than five years old that the Lead Agency may prepare a Subsequent EIR that updates or revises the Master EIR provided that the Agency references any changed conditions, including deletions, additions or other modifications to the previously certified Master EIR. In this case, the primary changed conditions would be the establishment of a redevelopment project area and the preparation of a proposed Redevelopment Plan within specific portions of the Southwest Plan Area.

Because the proposed Redevelopment Plan represents new information of substantial importance, which was not known and could not have been known at the time the previous Southwest Santa Rosa Area Plan EIR was certified as complete by the Santa Rosa City Council, and the proposed Redevelopment Plan may have one or more significant effects not discussed in the previous EIR, this Subsequent EIR (SEIR) has been prepared. This SEIR focuses on the proposed Redevelopment Plan and Redevelopment activities, and updates the previously certified Southwest Santa Rosa Area Plan EIR. The Southwest Area Plan and Southwest Area Plan EIR EIR-is are therefore incorporated into this document by reference, and is are available for public inspection at the City of Santa Rosa Department of Community Development, City Hall, 100 Santa Rosa Avenue, Santa Rosa, Calif. 95402. Specifically, this SEIR addresses the environmental impacts of implementing redevelopment where it can be shown that physical changes, both public and private, are facilitated under the proposed Redevelopment Plan. Additionally, it should be noted that any other new projects that may be proposed in the Southwest Plan Area not previously

addressed in the Southwest Santa Rosa Area Plan EIR will require separate environmental review.⁴ Because the Southwest Area Plan projects buildout to the year 2010, the 1994 EIR on the Southwest Area Plan projected environmental impacts to the year 2010 (including impacts from cumulative development within the region).⁵ Similarly, this SEIR projects environmental impacts to the year 2010, including impacts from cumulative development, where applicable to the individual technical sections contained in this SEIR (i.e., *Traffic and Circulation*, *Utilities*, *Noise*).

The proposed Redevelopment Plan is available for public inspection at the City of Santa Rosa Redevelopment Agency, 90 Santa Rosa Avenue, Santa Rosa, Calif. 95402.⁶

PROGRAM EIR

The EIR that addressed the Southwest Santa Rosa Area Plan was developed as a “Program” EIR. A Program EIR is an EIR which is prepared on a series of actions that are geographically related and can be characterized as one large project. This SEIR is also a Program EIR.

There are basic advantages to the Program EIR level of analysis. For example, a Program EIR provides for a more exhaustive consideration of the effects and alternatives than would be practical for an EIR on an individual action (such as an individual project comprising only a part of Area Plan development). In addition, a Program EIR ensures the consideration of cumulative impacts that otherwise could be overlooked on a case-by-case basis, avoids duplicative reconsideration of basic policy issues, and allows the Lead Agency to consider broad policy alternatives and area wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts. Subsequent activities in or related to the program, such as the proposed Redevelopment Plan addressed in this document, may be examined in the light of the Program EIR to determine whether additional environmental documents must be prepared.

SEIR SCOPING

Notice of Preparation

On October 19, 1999, the City of Santa Rosa Department of Community Development issued a Notice of Preparation (NOP) that a Subsequent EIR would be prepared for the proposed

Redevelopment Plan project. The 30 day NOP review period began on October 20, 1999 and ended on November 19, 1999. A summarized *Project Description* (Attachment A), along with maps indicating the location of the Redevelopment Plan project and outlining the Redevelopment Plan project area was attached to the Notice. A statement that the City of Santa Rosa and County of Sonoma have adopted a redevelopment survey area and are currently studying the feasibility of adopting a Redevelopment Plan in the southwest area of Santa Rosa was included in the Notice.

The Notice was submitted to local agencies (i.e., Sonoma County Agricultural Preservation & Open Space District, Sonoma County Permit & Resource Management Department, Roseland School District); local service providers (Sonoma County Transit, Sonoma County Parks Department); the State Clearinghouse which then directed the Notice on to other State agencies; and interested groups and individuals. The purpose of the Notice was to allow these and other public entities to transmit their concerns and comments on the scope and content of the SEIR, focusing on specific information related to each agency's statutory responsibility and/or group or individual's interest early in the environmental review process.

In response to the Notice, letters of comment were received from the following:

State Agencies

California Department of Fish and Game
Governor's Office of Planning and Research, State Clearinghouse

County of Sonoma

Sonoma County Water Agency

Organizations

Sierra Club, Sonoma Group
California Native Plant Society

Individuals

Betty Tenret

Public Scoping Meeting

In addition to the Notice of Preparation and responses thereto, the Santa Rosa Department of Community Development and Redevelopment Agency conducted a public SEIR scoping meeting at Cook Jr. High School, 2480 Sebastopol Road, Santa Rosa, on the evening of November 23,

1999, prior to preparation of the Draft SEIR. The purpose of the November 23, 1999 scoping meeting was to allow agency representatives, individuals and the public at large to express the environmental concerns that should be addressed in the SEIR for the proposed Redevelopment Plan project, and for the SEIR preparers to record those expressed concerns.

In response to the results of correspondence received as a result of the Notice of Preparation for this SEIR, and comments received at the November 23, 1999 scoping meeting, major issues to be studied in the SEIR were determined as follows:⁷

- Planning and Relationship to Plans
- Land Use
- Traffic and Circulation
- Public Services
- Utilities
- Visual Quality and Community Character
- Cultural Resources
- Hazardous Materials
- Soils, Geology and Seismicity
- Hydrology and Water Quality
- Biological Resources
- Air Quality
- Noise
- Growth Inducements

Accordingly, the environmental effects of implementing the Southwest Santa Rosa Redevelopment Plan project are analyzed in this SEIR under each major topic as listed above. It should be noted that the CEQA Guidelines define the effects of a project as changes from the environmental setting (existing conditions), that are attributable to the project. Short-term construction impacts as well as the long-term operational impacts are described as appropriate for the various topics.

The SEIR analysis addresses the Redevelopment Plan project as proposed based on the descriptions of Redevelopment actions contained in the proposed Redevelopment Plan (descriptive text and drawings). The assessment of environmental impacts in this SEIR is done at a level of detail proportional to the level of detail provided in the proposed Redevelopment Plan Report consistent with Section 15146 of the CEQA Guidelines.

STANDARD FOR ADEQUACY

Section 15151 of the CEQA Guidelines specifies that an SEIR should be prepared on a project with a sufficient degree of analysis to provide decision-makers with information that enables them to make a decision which intelligently takes account of environmental consequences. Where a particular project effect is too speculative for evaluation, discussion of the effect is concluded. The standards for adequacy are described in CEQA.⁸

- An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible.
- Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts.
- The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.

EFFECT ON THE ENVIRONMENT

Significant Effect

The proposed project is the Southwest Santa Rosa Redevelopment Plan project. Environmental impacts resulting from implementing the proposed Redevelopment Plan project are considered in this SEIR. Current environmental conditions under which the Redevelopment Plan would be implemented are considered in determining impact significance. If it is determined that a potential impact is too speculative for evaluation, this condition is so noted and the discussion of impact is terminated.

In accordance with Sections 15143 and 15145 of the CEQA Guidelines, this SEIR focuses on the significant effects on the environment resulting from the proposed Redevelopment Plan project. Each major topic (e.g., Hydrology, Biological Resources), provides criteria for evaluating whether an environmental impact is significant or insignificant. As explained in Section 15002 (g) of the CEQA Guidelines, a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project.

The definition of impact using terms such as "beneficial" or "insignificant" is not defined in the CEQA Guidelines, but for purposes of this SEIR a beneficial environmental impact is one in which an environmental condition is enhanced or improved, while an insignificant environmental

impact is one in which there is no long or short-term significant adverse change in environmental conditions.

Determining that a mitigation measure reduces an impact's significant level to a level of insignificance rests with understanding the criteria for determining a significant impact. If the criteria for determining a significant impact is not met, the impact is considered insignificant. For one or more significant unavoidable impacts that cannot be substantially mitigated, the Lead Agency (City of Santa Rosa Redevelopment Agency), under CEQA must prepare a Statement of Overriding Considerations in which the Lead Agency sets forth its views in writing on the ultimate balancing of the merits of approving a project despite the environmental impacts which would result from project implementation. This process requires consideration of the decision maker (the Lead Agency), to balance the benefits of a proposed project against its unavoidable environmental risks in determining whether to approve a project. The Statement is preserved in the record of project approval (if a project is approved), and is prepared after the Final EIR has been completed.

In this SEIR, in the discussion of environmental impacts and mitigation measures, a code is used to convey information regarding the significance of impacts before and after mitigation. The codes and their meanings are as follows:

- (S) = Significant adverse impact
- (PS) = Potentially Significant adverse impact
- (B) = Beneficial impact
- (I) = Insignificant impact

In Section 3, *Environmental Setting, Impacts and Mitigation Measures*, the impacts for each environmental topic are numbered, with one of the above codes following the discussion of impact. In addition, each mitigation measure for an environmental impact is followed with four lines of information as follows:

Mitigates: Impact 1.1 (I)
 Implementation: Construction Phase
 Responsibility: Construction Contractor
 Monitoring: Santa Rosa Department of Community Development

The above example is interpreted to mean: 1) the mitigation measure mitigates impact number 1.1 to a level of insignificance (I); 2) the mitigation measure should be implemented during the project construction phase; 3) the construction contractor would be responsible for implementing the mitigation measure, and 4) the Santa Rosa Department of Community Development would monitor the implementation and success of the mitigation measure, as defined further in this SEIR. Any mitigation measure proposed by the Redevelopment Agency is so noted. Otherwise, the stated mitigation measure is as determined in this SEIR.

Economic and Social Effects

The Redevelopment Plan project is intended to provide economic assistance to facilitate property development and rehabilitation. Section 15131 of the CEQA Guidelines specify that economic or social effects of a project shall not be treated as significant effects on the environment. However, “an EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes.”⁹ Accordingly, this SEIR focuses on physical changes stimulated through redevelopment assistance as identified in the Redevelopment Plan. It should be noted that the Redevelopment Plan is treated as the “project”. In certain cases, the Redevelopment Plan is not specific to any single construction project, for example water mains, storm drains or sewer lines, which are termed “public projects”. Such projects are treated in a general way in the evaluation of environmental impacts. This is consistent with CEQA Guidelines Section 15146 which provides that the degree of specificity required in an EIR should correspond to the degree of specificity involved in the underlying activity which is described in the EIR.

CUMULATIVE IMPACT ASSESSMENT

Cumulative impacts are also discussed in this SEIR. Cumulative impacts refers to two or more individual effects, which, when considered together, compound or increase the environmental impact under consideration or other related environmental impacts. For example, the cumulative impact from several projects is the change in environmental conditions which results from the

incremental impact of a project when added to other closely related past, present and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

Cumulative impacts are discussed in the respective technical sections of this SEIR as appropriate to the subject matter being addressed (i.e., Traffic and Circulation, Air Quality). See also Section 1, Summary, which identifies where in the SEIR cumulative impacts are discussed.

MITIGATION MONITORING AND REPORTING

Amendments to the California Environmental Quality Act (CEQA) require public agencies to adopt mitigation monitoring and reporting programs, for changes to a project to mitigate or avoid significant effects on the environment.

CEQA requires that a monitoring and reporting program be adopted "When making findings under subdivision (a) of Section 21081 (Public Resources Code), or when adopting a (mitigated) Negative Declaration ---." The monitoring and reporting program need not be a component of the EIR. The program is part of the project approval process, not necessarily part of the impact analysis process. This program will be included with the Redevelopment Agency findings for the Redevelopment project.

Notes - Introduction

1. *CEQA, California Environmental Quality Act, Statutes and Guidelines*, updated October, 1998, published by the Governor's Office of Planning Research.
2. Public Resources code 21061.1.
3. City of Santa Rosa, Department of Community Development, *Southwest Santa Rosa Area Plan, Final Environmental Impact Report*, (Revised Draft EIR), EIP Associates, March, 1994.
4. In accordance with CEQA Guidelines Section 15179 regarding limitations on use of the Master EIR.
5. City of Santa Rosa, Department of Community Development, *Southwest Area Plan*, approved by the Santa Rosa City Council on June 21, 1994, page 11.
6. Santa Rosa Redevelopment Agency, *Redevelopment Plan for the Southwest Redevelopment Project (Draft)*, March 6, 2000, and Santa Rosa Redevelopment Agency, *Preliminary Report for the Proposed Southwest Redevelopment Project*, Keyser Marston Associates, Inc., January, 2000.

7. The subject of *Population, Employment & Housing* was treated as a socioeconomic issue in the 1994 Southwest Area Plan EIR. Social or economic effects are not required to be addressed in an EIR unless a direct cause-and-effect relationship between social or economic conditions resulting from a project and environmental impacts can be shown. The discussion was provided for informational purposes and no adverse environmental impacts were noted. The study period was 1994 - 2010, the period within which the majority of the site-specific projects are anticipated to be built under the Southwest Area Plan. For these reasons, and because the planned development projects addressed in the Southwest Area Plan EIR that have not been constructed are the same today, the subject of *Population, Employment and Housing* is not re-evaluated in the Redevelopment Plan SEIR.
8. CEQA Guidelines Section 15151.
9. CEQA Guidelines Section 15131.

SUMMARY

1.1 BACKGROUND AND REDEVELOPMENT PROJECT ORIGINATION

Southwest Area Plan

The Southwest Plan Area encompasses approximately 3,800 acres and is generally bounded by U.S. 101 on the east, State Highway 12 on the north and the Santa Rosa Urban Boundary on the south and east. At buildout, and as envisioned in the Santa Rosa Southwest Area Plan, the Southwest Plan Area would contain 14,229 residential units housing a population of about 38,320 individuals. There would be about 7,937,400 gross square feet of commercial space (retail, industrial, R&D, office space), 555,000 gross square feet of institutional space (schools, fire station, post office), about 148 acres of developed park land and approximately 150 acres of designated open space. This compared to an existing count in 1994 of 4,616 residential units housing a population of about 14,122 individuals, 4,629,400 gross square feet of commercial space, 249,520 gross square feet of institutional space, 25, acres of developed park land and 14 acres of designated open space. Vacant land amounted to about 1,424 acres.

Proposed Redevelopment Project Area

Although there has been a great deal of developer interest in the Southwest Plan Area, blighted conditions have remained a major concern for local residents and businesses, thwarting development in the Southwest Plan Area. In an attempt to move forward with revitalization of the Southwest Plan Area, the City of Santa Rosa and County of Sonoma have agreed to work cooperatively in a joint redevelopment project to bring about a comprehensive redevelopment plan for portions of the Southwest Plan Area. After a preliminary study of the Southwest Plan Area in August, 1999, the Agency and County decided to exclude areas from the Southwest Redevelopment Survey^{*} Area where new development had occurred, and focus on the locations where blighted areas and the need for redevelopment is the greatest.

The proposed Redevelopment Project Area consists of two noncontiguous Redevelopment Subareas. These subareas (Subarea A and Subarea B) total approximately ~~2,014~~ 2,006 gross acres, and are subareas of the larger Southwest Plan Area. Approximately half of the Redevelopment Project Area is located in the City of Santa Rosa and half is located in the County of Sonoma.

Need for Redevelopment

For an area to be included in a redevelopment project area, it must be characterized by a combination of blighting conditions. Today, based on preliminary feasibility work, numerous blighting conditions exist in the Redevelopment Plan Area (subareas A and B), which are substantial enough to cause a reduction or lack of proper utilization to such an extent that it constitutes a physical and economic burden on the community which cannot reasonably be expected to be reversed by private enterprise or governmental action, or both, without redevelopment.

1.2 PROPOSED REDEVELOPMENT PROJECT PROGRAMS

The City of Santa Rosa Redevelopment Agency's proposed project of redevelopment is intended to serve as a catalyst to remove blighting conditions. The proposed redevelopment project includes 1) a Development Assistance Program, 2) a Public Project Program, and 3) a Housing Program. These redevelopment project programs include Economic Revitalization designed to eliminate impediments to private sector investment in the Redevelopment Project Area and Neighborhood Revitalization designed to improve and upgrade existing neighborhoods in the Redevelopment Project Area. It is believed that as the most significant blighting conditions are reduced that further private sector investment will occur in the Redevelopment Project Area and lead to the further removal of blight.

The Redevelopment Agency's redevelopment programs are conceptual in nature. Due to the lengthy time frame for implementing the Redevelopment Plan (30 years), the programs of redevelopment are intended to be flexible and provide the capability to respond to changes and private sector interests in the Redevelopment Project Area.

- 1) Development Assistance Program

The development assistance program is intended to result in the removal of deteriorated structures, spur the creation of new commercial development and assist in increasing property values.

Under this program, the Redevelopment Agency could assist with land acquisition, site preparation, offsite utility installation, disposition of property and relocation assistance to existing property owners and tenants. The Redevelopment Agency could also assist with hazardous remediation under this program. This program would address a variety of physical blighting conditions including deterioration and dilapidation and defective design.

- 2) Public Projects Program

The public project program focuses on infrastructure projects and is intended to assist in the alleviation of faulty or inadequate utilities in the redevelopment project area, thereby improving health and safety, removing impediments to private sector investments and providing for an environment for revitalization.

Public projects involve the installation of infrastructure identified in the Southwest Area Plan and include major roadway projects and modifications to the water, sewer and storm drain systems.

- 3) Housing Program

The Housing Program will provide assistance to build, improve, and preserve low and moderate income housing. Rehabilitation assistance could take the form of low interest or deferred payment loans for a variety of interior or exterior changes. It could also include loans that provide the source for funding to hook up to the City's water and sewer system.

It is intended that new development activity will occur in the Redevelopment Project Area as envisioned in the Southwest Area Plan as the Redevelopment Agency begins to remove impediments to development.

1.3 AREAS OF CONTROVERSY, ISSUES TO BE RESOLVED

At the time of preparing the SEIR, there are no areas of controversy expressed by the public or agencies having jurisdiction over environmental resources within the Southwest Plan Area, inclusive of Redevelopment Subareas A and B, regarding the proposed Redevelopment Plan project. Intrinsic to any decision being made on the Redevelopment Plan project, is the examination of project alternatives to mitigate the identified significant unavoidable adverse impacts. This SEIR presents three alternatives to the proposed Redevelopment Plan project, inclusive of 1) the No Project Alternative, 2) a Reduced Redevelopment Plan Project, and 3) an

Expanded Redevelopment Plan Project. In addition, an Environmentally Superior Alternative is identified. Refer to item 1.5 below, *Major SEIR Conclusions*, for additional information regarding the alternatives to the proposed Redevelopment Plan project.

1.4 REQUIRED APPROVALS

Projects constructed under the Redevelopment Plan would require the following approvals.

■ City of Santa Rosa

The Redevelopment Agency of the City of Santa Rosa will be approving various activities and agreements for implementing the Redevelopment Plan project (i.e., Acquisition Agreements, Disposition and Development Agreements, Housing Agreements, etc.). The Agency will also be approving all public improvement projects financed with tax increment monies. Infrastructure projects would need to comply with City plans and specifications for roadway/utility design. A series of permits and approvals from public agencies would be required before these projects could be constructed.

The City of Santa Rosa would need to issue encroachment permits for construction to occur within public rights-of-way. City grading permits would also be required in order to begin construction of the infrastructure projects.

■ Sonoma County

Prior to the construction of individual projects in unincorporated areas where the County has received applications, regardless of redevelopment involvement, project processing and permitting would be required through the County Permit and Resource Management Department (PRMD), and any other County departments as determined by PRMD. Project review and approvals would also be required through the Board of Zoning Adjustments and Board of Supervisors.

■ Local Agency Formation Commission

Prior to construction of individual projects for which the City has received applications, the City Council will need to adopt rezoning designations and individual property owners will need to submit annexation applications (where applicable) to the Local Agency Formation Commission (LAFCO) for approval.

■ Sonoma County Water Agency

Because the Sonoma County Water Agency owns right-of-way along Roseland Creek, and Colgan Creek and Naval Creek within the Southwest Plan Area, a revocable license will be required prior to any work performed within Water Agency right-of-way. The Water Agency will need to review any project development plans, for these areas prior to construction. Any creekside greenway plans will need to be coordinated with the Water Agency to insure continued flood control protection, hydrological capacity and continued maintenance access.

- **State Department of Transportation (Caltrans)**
Because U.S. 101 and Highway 12 are State facilities, owned and operated under the jurisdiction of Caltrans, all phases of the Bellevue Avenue/U.S. 101, Hearn Avenue/U.S. 101 and Fulton/Wright/Highway 12 interchange projects, from inception through construction and final acceptance, must be accomplished in accordance with Caltrans policies and procedures.
- **Metropolitan Transportation Commission (MTC)**
MTC, which has jurisdiction over the regional transportation system, must also review Federally funded or approved transit or highway projects for conformity with the region's State Implementation Plan for air quality.
- **Regional Water Quality Control Board (RWQCB)**
Regulations pertaining to stormwater discharges associated with construction activity were issued by the U.S. Environmental Protection Agency in 1990. The regulations prevent the pollution of storm water through the control of erosion, sedimentation and toxic or hazardous materials at construction sites.

A permit is required for construction projects such as road extensions, overcrossings, interchanges or development projects that are greater than five acres in extent, thus applying to many portions of the Southwest Area Plan projects. A Storm Water Pollution Prevention Plan is required that identifies the sources of sediment and other pollutants, and ensures the reduction of sediment and other pollutants in the storm water discharged from a construction site.
- **California Department of Fish and Game/U.S. Army Corps of Engineers**
Approvals from the California Department of Fish and Game would be required for any necessary streambed alteration agreements. Additionally, the U.S. Army Corps of Engineers would need to issue a section 404 Permit under the Clean Water Act, and Section 10 Permit under the Rivers and Harbors Acts for any alterations to wetlands.

1.5 MAJOR SEIR CONCLUSIONS

The following presents the major conclusions and findings of the SEIR. Table 1-1 summarizes the environmental impacts and mitigation measures as contained in the body of the SEIR. The description of most impacts and mitigation measures in Table 1-1 has been abbreviated consistent with the format of a summary section, and the reader is referred to the Main SEIR text for a complete discussion of environmental impacts and mitigation measures (refer to the numbering sequence for location). A summary description of each alternative to the Redevelopment Plan project as proposed is also provided.

TABLE 1-1
SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
3.1 SOCIAL/CULTURAL ISSUES			
3.1.1 Planning and Relationship to Plans	As indicated below: (I)	As indicated below: None required	As indicated below:
The Redevelopment Plan Project has been found to be consistent with the provisions of the goals, objectives and policies of the Southwest Santa Rosa Area Plan, and Sonoma County General Plan.			
3.1.2 Land Use			
<u>Development Assistance Program</u> No adverse land use impacts are identified under the Development Assistance Program.			
<u>Public Projects Program</u>			
<u>Impact 3.1.2-1</u> <i>Roadway widening, reconstruction, and installation projects could disrupt portions of the physical arrangement of the established community through the additional acquisition of rights-of-way.</i>	(S)	3.1.2-1 Any real property acquisitions and any resulting displacement of persons necessary for the projects will be done in accordance with the eminent domain law and the applicable state or federal real property acquisition and relocation laws. If a project undertaken as part of a redevelopment project will result in the removal of any existing low and moderate income housing, the Santa Rosa Redevelopment Agency shall replace each low and moderate income housing unit removed on a one-for-one basis within four years of its removal in accordance with the Community Redevelopment Law.	(I)
<u>Housing Program</u> No adverse land use impacts are identified under the Housing Program.			

Legend: (S) Significant Adverse Impact (SU) Significant, Unavoidable Adverse Impact (PS) Potentially Significant Adverse Impact (I) Insignificant Impact (B) Beneficial Impact

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Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
3.1.3 Traffic and Circulation			
<u>Development Assistance Program</u>			
<u>Impact 3.1.3-1</u> <i>In the absence of mitigation measures, the Redevelopment Plan project, along with cumulative traffic growth, would have a significant impact (i.e., result in conditions below the City standard) on the following arterial streets</i>	(S)	3.1.3-1 Provide the turning movement lanes, signalization, freeway interchanges and other traffic and circulation mitigation measures as specified for each intersection in the <i>Traffic and Circulation</i> section of this SEIR.	(I)
■ <i>Stony Point Road, from Highway 12 to Hearn Avenue (LOS "F"), and Hearn to Todd Road southbound (LOS "E")</i> ■ <i>Sebastopol Road, from Wright Road to Stony Point Road westbound, LOS "F"</i> ■ <i>Dutton Avenue, from Highway 12 to Northpoint Parkway, LOS "E" southbound/ "F" northbound</i> ■ <i>Northpoint Parkway, from Corporate Center Parkway to Stony Point Road (LOS "E/F"), and Stony Point Road to Bellevue Avenue westbound (LOS "F")</i> ■ <i>Corporate Center Parkway, from Sebastopol Road to Northpoint Parkway southbound (LOS "F")</i>			

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Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
■ <i>South Wright Road, from Highway 12 to Ludwig Avenue northbound (LOS "F")</i> ■ <i>Todd Road, from Llano Road to US 101 in the westbound direction (LOS "F")</i> ■ <i>Corby Avenue, between Earle Street and Hearn Avenue (LOS "F")</i>			
<u>Impact 3.1.3-2</u> <i>The Redevelopment Plan project, along with cumulative traffic growth, would have a significant impact (LOS "E" or worse) on US 101 from Wilfred Avenue to Highway 12. The LOS is projected at "F" in this area. Average travel speeds would be in the 9-25 MPH range during the PM peak hour.</i>	(SU)	3.1.3-2 Possible mitigation options include: ■ Enforcing HOV lane use (restriction) only in northbound direction during the PM peak, rather than both directions. ■ Providing no HOV lane on US 101 (added lanes open to all traffic). ■ Widening of 101 to 8 basic lanes in critical areas (Todd to Highway 12). ■ Implementing light rail or commuter rail services on the Northwestern Pacific Railroad line.	(SU)

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SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impacts	Impact Significance Without Mitigation		Mitigation Measures	Impact Significance With Mitigation
<u>Impact 3.1.3-3</u> <i>The demand for transit trips in the Southwest Area would increase because of growth and development. Existing transit services in the Southwest Area currently have excess capacity, so the extent of the impact would depend upon how much service were expanded (as needed) to serve new demand. The City's Transit and Parking Department has expressed concern that it may not be able to expand service unless additional funding is found.</i>	(PS)	3.1.3-3	The City's <i>Long Range Transit Plan</i> (June 1990) provides for an array of bus service improvements based on public input and technical analysis:	(I)
<u>Impact 3.1.3-4</u> <i>Through growth, the Redevelopment Plan project would encourage increased vehicular traffic, including use of local and collector streets in developed portions of the Southwest Plan Area. This could adversely affect the sense of residential environment and affect safety, and would be a potentially significant impact.</i>	(PS)	3.1.3-4	Implement the various techniques for improving the residential street environment as described in the <i>Traffic and Circulation</i> section of this SEIR.	(I)
<u>Impact 3.1.3-5</u> <i>The Redevelopment Plan project in conjunction with cumulative growth would increase the demand for non-motorized transportation in the area, i.e., bicycle and pedestrian travel.</i>	(I)	3.1.3-5	None specifically required for the Redevelopment Plan project. The pedestrian needs have been addressed through the policies of the Area Plan including: ■ A well connected internal circulation system, that, to the extent possible, minimizes pedestrian crossings of major streets ■ Mixed land uses that minimize distances for daily trip activities, and thus promote walking and cycling as alternatives to the auto ■ Providing sidewalks on streets	(I)

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SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impacts	Impact Significance Without Mitigation		Mitigation Measures	Impact Significance With Mitigation
<u>Impact 3.1.3-6</u> <i>The development of different areas in the Southwest Plan Area would create the need to make improvements on individual streets and roads. The precise impact of each significant, or potentially significant development, should be considered in the traffic impact analysis prepared for each site. The Southwest Area Plan lays out a phasing program of transportation projects that should keep traffic level of service within acceptable standards. Future traffic conditions will depend upon the timing and occupancy of future developments, which will depend upon market conditions and numerous factors that are outside the control of the City. For short periods of time (perhaps several months to several years), traffic level of service may fall below standards until transportation improvements can be implemented.</i>	(PS)	3.1.3-6	Mitigation measures shall include: ■ Traffic improvements will be implemented to assure that there will be adequate and timely funding of all of the transportation and roadway improvement projects anticipated in the Plan. ■ Periodic data collection programs (such as traffic counts, delay and travel time studies) conducted by the City and by project applicants as part of the monitoring program to assess traffic conditions, and suggest necessary changes to the timing of projects. ■ Building traffic improvements sooner than the phasing program calls for, whenever opportunities appear for additional public and/or private funding, and demand at present or in the near future warrants.	(I)
Public Projects Program				
<u>Impact 3.1.3-7</u> <i>Infrastructure construction would lead to increased truck and construction vehicle activity on the local roadway network in the area of construction. Construction related traffic would be expected to require temporary road closures, temporary obstructions to property access and travel delays and congestion caused by construction vehicle traffic during the various infrastructure construction periods.</i>	(PS)	3.1.3-7	A construction traffic management plan shall be prepared prior to the beginning of work on infrastructure projects. The plan shall identify strategies to maintain adequate service levels on local roadways and provide access to residential and business sites. Advance notice of construction activity shall be provided to homeowners through letters or leaflets, and in the general media (such as newspaper advertising).	(I)

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Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
<u>Housing Program</u>			
The assessment of traffic and circulation impacts and mitigation measures as addressed under the Development Assistance Program and Public Projects Program would apply equally to the Housing Program.			
3.1.4	Public Services		
<u>Development Assistance Program</u>			
The analysis of public service impacts is discussed under the Housing Program because the Housing Program would have the greatest effect on commercial and residential development of the three programs of the Redevelopment Plan.			
<u>Public Projects Program</u>			
Implementation of the infrastructure services would accommodate development already anticipated in the Southwest Area Plan. Such development would in turn increase demand for public services. Such secondary public service impacts are assessed below under the Housing Program.			

Legend:	(S) Significant Adverse Impact	(SU) Significant, Unavoidable Adverse Impact	(PS) Potentially Significant Adverse Impact	(I) Insignificant Impact	(B) Beneficial Impact
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Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
Housing Program			
Police Protection			
Impact 3.1.4-1 <i>The Redevelopment Plan would stimulate residential development and associated commercial development in the Redevelopment Subareas A and B, and in the Southwest Plan Area more generally. At buildout of the Southwest Plan Area, such development would require an additional 36 officers, additional patrol vehicles, additional support personnel, and expansion of the Santa Rosa Police Department's headquarters to meet their new service target of 1.5 officers per 1,000 residents.</i>	(S)	3.1.4-1 The City shall agree to monitor response times in the Redevelopment Area to assure that the level of police services coincides with the average response time citywide. Should the response times fall below the citywide average, adjustments will be made to staffing and/or the boundaries of the Neighborhood Oriented Policing Zones. The City shall agree to fund the additional resources as requested by the Santa Rosa Police Department during the annual budget process over the buildout of Redevelopment Subareas A and B and the Southwest Plan Area more generally. The timing for providing these resources shall be keyed to population growth in the Southwest Plan Area, with the goal being to achieve the Department's current standard of 1.5 officers per 1,000 residents.	(I)

Legend:

(S) Significant
Adverse Impact

(SU) Significant, Unavoidable
Adverse Impact

(PS) Potentially Significant
Adverse Impact

(I) Insignificant Impact
(B) Beneficial Impact

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Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
Fire Protection			
<u>Impact 3.1.4-2</u> <i>To achieve the standard response times and level of fire services in Redevelopment Subareas A and B, the existing station 8 would have to be relocated to a more central site and two more additional fire station sites would have to be developed.</i>	(S)	3.1.4-2 The City shall agree to monitor response times in Redevelopment Subareas A and B to assure the level of fire services coincides with the average response time city wide. Relocation of Station 8 or other measures as appropriate will be prioritized and funded to assure response times are met. The City shall agree to fund the relocation of Station 8 from its current location to a site closer to Burbank Avenue and Hearn Avenue and the development of two new station sites, one at 1955 Northpoint Parkway and the other near Petaluma Hill Road and Kawana Springs Road during the annual budget process over the buildout of Redevelopment Subareas A and B and the Southwest Plan Area more generally. The Timing for providing these resources shall be keyed to population growth in the Southwest Area, with the goal being to achieve the Department's current response standards for providing fire services. This mitigation would reduce this impact to an insignificant level.	(I)
Schools			
<u>Impact 3.1.4-3</u> <i>Buildout of Redevelopment Subareas A and B would generate an estimated 1,059 new elementary school students, 265 new junior high school students, and 529 new senior high school students.</i>	(S)	3.1.4-3 Prior to the issuance of building permits, the City shall require proof of payment of the statutory development fee or the mitigation fee imposed by the school districts that serve the Redevelopment Subareas, as authorized by State law, consistent with Policy PSF-3a, Page 107 of the City of Santa Rosa General Plan. The impacted school districts should use these funds to provide adequate school facilities to meet the needs of the additional school district enrollments to reduce school impacts to an insignificant level.	(I)

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Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
Parks and Recreation			
<u>Impact 3.1.4-4</u> <i>The buildout of Redevelopment Subareas A and B would require the development of 46 acres of park land or accessible open space and buildout of the Southwest Area Plan would require the development and maintenance of a total of 230 acres of park land or accessible open space.</i>	(S)	3.1.4-4 Prior to issuance of a building permit the City shall require that each current or future project sponsor in the Southwest Plan Area provide adequate park land dedication in their project proposals or pay the in-lieu Land Dedication Fees and the Park Development Fees.	(I)
3.1.5 UTILITIES			
<u>Development Assistance Program</u>			
Because the Housing Program would have the same potential impacts as the Development Assistance Program, but more extensively, these secondary impacts of the Redevelopment Plan are discussed under the Housing Program below.			
<u>Public Projects Program</u>			
The Public Projects Program may have a secondary effect on utilities services. Because the Housing Program would also have the same potential impacts as the Public Projects Program, but more extensively, these impacts of the Redevelopment Plan are discussed under the Housing Program below.			

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Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
<u>Housing Program</u>			
<u>Water Supply and Distribution</u>			
<u>Impact 3.1.5-1</u> <i>Water use with the development anticipated under the Redevelopment Plan would amount to approximately 1.1 million gallons per day (mgd), or 16% of the 6.7 mgd anticipated with buildout of the Southwest Plan Area. This would be a 5% increase over the City's current use of 21 mgd, and 28% of the additional 4 mgd that the City anticipates developing by May 2001. Although the additional water demand is within the City's entitlement of 50 mgd from the Sonoma County Water Agency (SCWA), and that it could be met with the City's own anticipated supply, the additional water demand would exacerbate the more regional constraint to water supply the SCWA is experiencing through regulatory constraints and litigation, and the impact would be potentially significant.</i>	(PS)	3.1.5-1 Given the more regional constraint to water supply the Sonoma County Water Agency is experiencing through regulatory constraints and litigation that are delaying planned water supply and transmission system facilities, the City of Santa Rosa shall continue to develop alternative sources of water and storage/conveyance facilities, including reactivating unused wells, developing new wells, and increasing storage capacity to meet peak water needs. The City will also consider the use of reclaimed water to offset the use of potable water in its long-term planning.	(I)
<u>Solid Waste</u>			
<u>Impact 3.1.5-2</u> <i>Development of the Southwest Plan Area, inclusive of Redevelopment Subareas A and B, would be expected to increase the solid waste stream to the Sonoma county Central Landfill by 22,100 tons per year. This would be a 4.6% increase over the current waste stream to the landfill.</i>	(I)	3.1.5-2 No mitigation measure is specifically required. Development in the Southwest Plan Area will be responsible for complying with ordinances enacted by the City of Santa Rosa to achieve the goals mandated by AB 939 and the requirements of AB 1327.	(I)

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	Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
3.1.6	VISUAL QUALITY AND COMMUNITY CHARACTER			
	<u>Development Assistance Program</u>			
	<u>Impact 3.1.6-1</u> <i>Buildout as envisioned in the Southwest Area Plan and as assisted through the Redevelopment Plan would result in the conversion of undeveloped land parcels that are currently vacant to an urban condition. This development would constitute a significant change in visual conditions within central to south and west portions of the Southwest Plan Area, and visually contrast with remaining undeveloped lands to the west and south outside of the Southwest Plan Area.</i>	(SU)	3.1.6-1 The planning and design of projects for buildout of the Redevelopment Plan Subareas shall conform to the Goals, Objectives and Policies for Community Design as contained within the Community Design Program Chapter of the Southwest Area Plan. Conformance review would occur with each development decision utilizing the General Plan Urban Design Element, the Community Design Program of the Southwest Area Plan, and the City's Subdivision Design Guidelines to make decisions regarding proposed developments.	(SU)
	<u>Impact 3.1.6-2</u> <i>Development Assistance Program financing for land acquisition and deteriorated structure removal would serve to improve the appearance of localized portions of Redevelopment Subareas A and B. This would be a beneficial visual quality and community character impact.</i>	(B)	3.1.6-2 None required.	
	<u>Public Projects Program</u>			
	<u>Impact 3.1.6-3</u> <i>Infrastructure construction of new roads, roadway widening, storm sewers, sanitary sewers and water supply, would require earth excavation, materials stockpiling and the use of construction equipment which would appear inconsistent with the setting. Road widenings would be expected to require the removal of existing trees at scattered locations which currently serve as visual amenities in the existing setting.</i>	(PS)	3.1.6-3 The stockpiling of infrastructure supplies and equipment prior to installation shall be minimized to the extent practicable. Only materials required for several days of construction shall be stockpiled at any given site at one time. The removal of trees necessary to install infrastructure shall be compensated for consistent with the Street Design Standard Policies contained in the Community Design Chapter of the Southwest Area Plan.	(I)

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Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
<u>Impact 3.1.6-4</u> <i>If constructed as proposed, the Fulton/Wright Road overcrossing and interchange at State Highway 12 would be seen as increased urbanization in an area that currently appears semi-rural in character. The transition from semi-rural to urban conditions to the eastbound Highway 12 motorist would be sudden and abrupt.</i> <u>Housing Program</u> The discussion of impacts and mitigation measures under the Development Assistance Program would apply equally to the Housing Program, with the exception of land acquisition and deteriorated structure removal under the Development Assistance Program. Under the Housing Program, structural rehabilitation would be a beneficial impact in that it would assist in fulfilling the goals of the Redevelopment Plan project to remove blight, including zoning code violations, and buildings that are currently unsafe to occupy.	(SU)	3.1.6-4 The structure crossing Highway 12 shall be designed in such a way as to appear pleasing to the eye. In other words, it would be preferable to avoid large I beams supporting the roadway itself from assuming visual importance. The concrete exterior of the bridge structure could be designed to wrap around and screen from view all steel support work, and receive a textured treatment that is visually interesting and reduces the perceived scale and overall mass of the structure.	(SU)

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Impacts		Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
3.1.7	CULTURAL RESOURCES			
	<u>Development Assistance Program</u>			
	Archaeological Resources			
	<u>Impact 3.1.7-1</u>			
	<i>Five prehistoric archaeological sites and five historic archaeological sites are recorded within the Southwest Plan Area. There are also isolated prehistoric cultural materials that have been discovered at seven locations, indicating that additional resources are likely present. These sites could be disturbed by development.</i>	(PS)	3.1.7-1 Based on what is known about the region, it is reasonable to assume that prehistoric cultural deposits can be found anywhere in the Southwest Plan Area. It is therefore recommended that no part of the Southwest Plan Area be exempt from comprehensive archaeological study. Those portions of the Southwest Plan Area for which no development proposal has been submitted that have not been subjected to archaeological field investigations should be studied as part of the development plan and environmental review processes as new project proposals come on line. If field reconnaissance results in the recording of prehistoric archaeological sites that cannot be avoided and preserved, and the importance of the cultural deposits cannot be determined from surface evidence, then subsurface testing programs should take place. Development-related impacts to important prehistoric archaeological sites could be mitigated by avoidance of the sites, covering or capping sites with a protective layer of fill, or data recovery through excavation and analysis.	(I)

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Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
Historic Properties			
<u>Impact 3.1.7-2</u> <i>Approximately 740 properties within the Southwest Plan Area including Redevelopment Subarea B west of South Wright Road are known or estimated to have been constructed prior to 1946 which could be disturbed by development.</i>	(PS)	3.1.7-2 Those portions of the Southwest Plan Area that have not been subject to site-specific cultural resources evaluation shall undergo an historic architectural review based on the existing inventories as new development projects come on line. No part of the Southwest Plan Area should be exempt from the process of determining if structures meet CEQA criteria as important historic resources. If development-related impacts to important historic structures are identified, significant impacts could be mitigated by avoidance, relocation or the precise recording of the structure through measurements, drawings and photographs.	(I)
<u>Public Projects Program</u>			
Impacts and mitigation measure 3.1.7-1 described above for the Development Assistance Program would apply equally to the Public Projects Program.			
<u>Housing Program</u>			
The impacts and mitigation measures described above for the Development Assistance Program would apply equally to the Housing Program.			

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Impacts		Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
3.1.8	HAZARDOUS MATERIALS			
	<u>Development Assistance Program</u>			
	<u>Impact 3.1.8-1</u> <i>During the earth-moving phases of construction, site workers and the public could be exposed to hazardous contaminants in soil and groundwater.</i>	(PS)	3.1.8-1 If work is undertaken at a contaminated site, the applicant will prepare a Site Safety and Health Plan (a California Division of Occupational Safety and Health requirement for work at hazardous waste sites). The plan will be prepared in accordance with regulatory requirements and the <i>Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities</i> .	(I)
	<u>Impact 3.1.8-2</u> <i>Demolition, removal or renovation could disturb hazardous materials in existing buildings and building components, resulting in human or environmental exposure.</i>	(PS)	3.1.8-2 Prior to commencing the demolition, removal or substantial renovation of any existing building or facility, each project applicant will retain a qualified environmental specialist to inspect the building or facility. The specialist will identify any asbestos, PCBs, mercury, lead, or other hazardous materials present. If found at levels that require special handling, these materials will be managed as required by law and according to federal and state regulations and guidelines, including those of the Bay Area Air Quality Management District, the California Division of Occupational Safety and Health, the California Department of Toxic Substances Control, and the Sonoma County Health Services Department.	(I)
	<u>Impact 3.1.8-3</u> <i>Demolition or removal of structures containing hazardous materials could reduce potential health threats and prevent individuals on and off site from encountering these materials in the future. This would be a beneficial impact.</i>	(B)	3.1.8-3 See Mitigation Measure 3.1.8-2.	

Legend: (S) Significant Adverse Impact (SU) Significant, Unavoidable Adverse Impact (PS) Potentially Significant Adverse Impact (I) Insignificant Impact (B) Beneficial Impact

**TABLE 1-1
SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
<u>Impact 3.1.8-4</u> <i>Project development as assisted through the Development Assistance Program would increase the handling, storage, and transportation of hazardous materials by area residents, commercial businesses, and industries.</i>	(I)	3.1.8-4 None specifically required for the Redevelopment Plan project under existing regulations.	
<u>Impact 3.1.8-5</u> <i>Project development would increase the generation and disposal of hazardous wastes by area residents, commercial businesses, and industries.</i>	(I)	3.1.8-5 None specifically required for the Development Assistance Program under existing hazardous waste programs.	
<u>Public Projects Program</u> Impacts 3.1.8-1 and 3.1.8-2 and Mitigation Measures 3.1.8-1 and 3.1.8-2 would apply to the Public Projects Program.			
<u>Housing Program</u> Impacts 3.1.8-1, 3.1.8-2, 3.1.8-4, 3.1.8-5, discussed in the context of the Development Assistance Program above, would apply equally to the Housing Program. Mitigation Measures 3.1.8-1 and 3.1.8-2 would also apply.			
3.2 PHYSICAL/BIOLOGICAL ISSUES			
3.2.1 SOILS, GEOLOGY AND SEISMICITY			
<u>Development Assistance Program</u>			
<u>Impact 3.2.1-1</u> <i>Development sites in Redevelopment Subarea A may be subject to the damaging effects of surface rupture along a possible splinter fault of the Rodgers Creek fault zone.</i>	(PS)	3.2.1-1 Require that the recommendations of site-specific fault trace location and activity level investigations, conducted by California Certified Engineering Geologists, Registered Geologists or Geotechnical Engineers, be incorporated in the project design for sites or alignments that cross, or are within 50 feet of, the trace of the possible splinter fault that passes through Redevelopment Subarea A.	(I)

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SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impacts	Impact Significance Without Mitigation		Mitigation Measures	Impact Significance With Mitigation
<u>Impact 3.2.1-2</u> <i>Redevelopment Subareas A and B and the Southwest Plan Area in general will be subject to potentially damaging seismically induced groundshaking.</i>	(PS)	3.2.1-2	Require the use of site-specific ground motion criteria, as described in CBC § 1629, and reviewed by the City's California-registered geotechnical and/or structural engineer, to be incorporated in the design of trenches, slopes, foundations and structures for projects within the Redevelopment Area.	(I)
<u>Impact 3.2.1-3</u> <i>The use of expansive or weak soils for foundation support without prior treatment could create unstable soil conditions at the construction site, thus threatening the integrity of completed construction.</i>	(PS)	3.2.1-3	Require site-specific soil suitability analysis and stabilization procedures, and design criteria for foundations, as recommended by a California-registered soil engineer during the design phase for each site where the existence of unsuitable soil conditions is known or suspected.	(I)
<u>Public Projects Program</u> The construction related soils, geology and seismicity impacts discussed under the Development Assistance Program, together with mitigation measures, would apply equally to infrastructure projects constructed under the Public Projects Program.				
<u>Housing Program</u> Impact and Mitigation Measures 3.2.1-1 through 3.2.1-3 as discussed under the Development Assistance Program would apply equally to construction assisted under the Housing Program.				

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SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impacts		Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
3.2.2	HYDROLOGY AND WATER QUALITY			
	<u>Development Assistance Program</u>			
	<u>Impact 3.2.2-1</u> <i>Construction of proposed residential, commercial and mixed-use projects within the Southwest Plan area as assisted through redevelopment would result in an increase in impervious areas and higher levels of surface runoff than currently leaves the area, potentially increasing erosion and flooding in downstream drainageways.</i>	(PS)	3.2.2-1 Overall mitigation strategy includes a project specific design review phase focused on the development and inclusion of explicit elements to reduce the proportion of impervious surfaces within each individual project area and to allow improved management of stormwater flows throughout the Southwest Plan Area.	(I)
	<u>Impact 3.2.2-2</u> <i>Projected proposed project development as assisted through the Redevelopment Plan will reduce infiltration in a natural groundwater recharge zone by about 25 percent.</i>	(PS)	3.2.2-2 Implement Mitigation Measure 3.2.2-1. In addition, the City shall encourage the use of detention basins/ponds where feasible to partially offset the loss of groundwater recharge area within the Plan Area.	(I)

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TABLE 1-1
SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impacts	Impact Significance Without Mitigation		Mitigation Measures	Impact Significance With Mitigation
<u>Public Projects Program</u>	(PS)	3.2.2-3	Implement Mitigation Measures 3.2.2-1 and 3.2.2-2. In addition, any project involving grading of an area greater than five acres shall be subject to an National Pollution Discharge Elimination System permit from the Regional Water Quality Control Board. This permit requires that the applicant develop a Storm Water Pollution Prevention Plan. The permit requirements of the RWQCB shall be satisfied prior to granting of a building permit by the City of Santa Rosa.	(I)
<u>Impact 3.2.2-3</u> <i>Development construction activities for proposed infrastructure, inclusive of privately sponsored projects in the Southwest Plan Area, could result in short- or long-term increases in erosion.</i>			A soil erosion and sedimentation control plan shall be submitted to the City of Santa Rosa for individual projects prior to grading. The Erosion and Sediment Transport Control Plan, shall be designed by an erosion control professional, or landscape architect or civil engineer specializing in erosion control, that would meet the following objectives for the grading, excavation, and construction periods of projects in the Redevelopment Area.	
<u>Impact 3.2.2-4</u> <i>Increased runoff from additional impermeable surfaces could lower the quality of stormwater runoff.</i>	(PS)	3.2.2-4	Implement Mitigation Measures 3.2.2-1 through 3.2.2-3. In addition, install easily cleanable sediment catch-basins, debris screens, and grease separators or similar water quality protection devices in the channels and drainage facilities serving the Redevelopment Plan area.	(I)
<u>Housing Program</u> The discussion of hydrology and water quality impacts and mitigation measures as addressed under the Development Assistance Program and Public Projects Program would apply equally to the Housing Program.				

Legend: (S) Significant (SU) Significant, Unavoidable (PS) Potentially Significant (I) Insignificant Impact
Adverse Impact Adverse Impact Adverse Impact Adverse Impact Beneficial Impact
(B)

**TABLE 1-1
SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

Impacts		Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
3.2.3	BIOLOGICAL RESOURCES			
	<u>Development Assistance Program</u>			
	<u>Impact 3.2.3-1</u> <i>Construction of proposed residential, commercial and mixed-use projects within the Southwest Plan Area as assisted through redevelopment would result in the loss of an undetermined number of Valley Oaks and an undetermined acreage of regenerating Valley Oaks and Valley Oak Woodland.</i>	(S)	3.2.3-1 Impacts to oaks shall be avoided and groups of mature valley oaks shall be preserved wherever possible. To ensure long-term preservation of oaks within the Southwest Plan Area, areas of natural oak regeneration shall be protected as specified in the <i>Biological Resources</i> section of this SEIR.	(I)
	<u>Impact 3.2.3-2</u> <i>Project construction in the vicinity of Roseland Creek and the drainage swale located south of Highway 12, between North Wright and Fern Roads within the Southwest Plan Area would result in the loss of an estimated 5 to 10 acres of Valley-Foothill Riparian Woodland.</i>	(S)	3.2.3-2 Impacts to Valley-Foothill Riparian Woodland shall be avoided. To ensure long-term preservation of this habitat and the valuable wildlife corridors it provides within the Southwest Plan Area, the avoidance, compensation, and enhancement measures as specified in the <i>Biological Resources</i> section of this SEIR would reduce this impact to insignificance.	(I)
	<u>Impact 3.2.3-3</u> <i>Project construction could result in loss of known and potential vernal pool, vernal swale, and freshwater emergent wetland habitat within grassland areas and at creek crossings.</i>	(S)	3.2.3-3 Impacts to wetland resources shall be avoided or minimized by: (1) relocation of all site improvements from wetlands subject to the jurisdiction of the U.S. Army Corps of Engineers to portions of the property without such wetlands, (2) minimizing or reducing the size and area of site improvements within such wetland areas, (3) restricting the size and areas of construction sites within such wetland areas, or (4) using Best Management Practices.	(I)

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TABLE 1-1
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SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		For wetland impacts that cannot be avoided or minimized, project developers will (1) prepare a mitigation and monitoring plan in consultation with U.S. Fish and Wildlife Service and California Department of Fish and Game to replace or restore lost wetland according to Corps guidelines, and either obtain (2) a 1603 Streambed Alteration Agreement from the CDFG or (3) a Section 404 permit to place fill in wetlands from the U.S. Army Corps of Engineers.	(I)
<u>Impact 3.2.3-4</u> <i>Project construction within the Southwest Plan Area could alter existing hydrological characteristics of vernal pool/swale systems extending west to the Laguna de Santa Rosa and southwest to the Todd Road Vernal Pool Preserve.</i>	(S)	3.2.3-4 Implementation of the National Pollution Discharge Elimination System permit requirements regarding the implementation of nonpoint pollution source control of stormwater runoff through the application of Best Management Practices could reduce vernal pool/wetland pollution and sedimentation impacts to a level of insignificance.	(I)
<u>Impact 3.2.3-5</u> <i>Grading activities during project construction and the establishment of project landscaping in areas near existing wetlands could inadvertently introduce exotic plant pests to sensitive wetlands, thus decreasing habitat values.</i>	(S)	3.2.3-5 To minimize the expansion of exotic plants into wetlands, native plant species shall be used for revegetation. Landscaping using native plant species near appropriate buffer areas shall be implemented in accordance with wetlands mitigation and management plans.	(I)
<u>Impact 3.2.3-6</u> <i>Development within the Southwest Plan Area as assisted through the Redevelopment Plan, will result in loss of grassland foraging area for sensitive bird species known to occur within the Southwest Plan Area.</i>	(PS)	3.2.3-6 There is no feasible mitigation available. As the removal of grassland would restrict the area available within the Southwest Plan Area for foraging, this impact would remain potentially significant.	(SU)

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SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
<u>Impact 3.2.3-7</u> <i>Development and related activities within the Southwest Plan Area as assisted through the Redevelopment Plan, could result in the loss of or damage to sensitive communities and/or to threatened and endangered plants and animals and/or their habitat.</i>	(S)	3.2.3-7 Implement Mitigation Measures 3.2.3-3a, 3.2.3-3b, and 3.2.3-3c. Because California hinderiella is a Federal Species of Concern and the vernal pool fairy shrimp is officially listed by the USFWS, appropriately timed late winter and spring surveys of vernal pools and other seasonal standing water bodies shall be conducted by biologists certified to survey for fairy shrimp, according to USFWS Vernal Pool Crustaceon Survey protocol. If avoidance is not feasible, a species recovery plan shall be initiated in conjunction with a wetlands compensation plan involving wetland creation under the direction of USFWS. This would include removal of the topsoil, along with invertebrate eggs or cysts, in areas to be impacted, and transportation of the soil to newly created pools or seasonal wetlands. (I) Avoidance of wetland impacts is the preferred mitigation approach.	(I)
<u>Impact 3.2.3-8</u> <i>Construction activity and practices associated with the proposed projects could adversely affect water quality in creeks and intermittent drainages within the Southwest Plan Area.</i>	(S)	3.2.3-8 Construction practices which would avoid siltation or contamination of watercourses would reduce this impact to insignificant.	(I)

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TABLE 1-1
SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
<u>Impact 3.2.3-9</u> <i>The removal of trees, shrubs, or grassland vegetation for the construction of projects could result in a "take" resulting from nest abandonment and/or loss of reproductive effort. This would be a violation of Sections 3503, 3503.5, 3513, and 3800 of the State of California Fish and Game Code, and would be a potentially significant impact.</i>	(PS)	3.2.3-9 The removal of trees, shrubs, or grassland vegetation shall avoid the February 1 through August 31 bird nesting period. If no construction or tree removal is proposed during the nesting period, no surveys are required. If it is not feasible to avoid the nesting period, a survey for nesting birds shall be conducted by a qualified wildlife biologist no earlier than 45 days and no later than 20 days prior to removal of trees, shrubs, grassland vegetation, or buildings, or grading or other construction activity. In the event that an active nest is discovered in the areas to be disturbed, clearing and construction shall be postponed for at least two weeks or until a wildlife biologist has determined that the young have fledged (left the nest), the nest is vacated, and there is no evidence of second nesting attempts.	(I)
<u>Public Projects Program</u> Infrastructure construction of new roads, roadway widening, storm sewers, sanitary sewers and water supply, would require earth clearing, grading and excavation, backfilling and earth compaction, materials stockpiling and related activities. The need for additional rights-of-way for new roads and road widening projects would be an additional concern. The construction related impacts and mitigation measures discussed for the Development Assistance Program would apply equally to the Public Projects Program.			

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Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
<u>Impact 3.2.3-10</u> <i>The construction of new roads (Fresno Avenue-South, Northpoint Parkway-West, and Bellevue-Ludwig Connector) and the improvement of existing roads (Ludwig Avenue) could result in disruption and wildlife mortality in areas of known wildlife migration or movements.</i> <u>Housing Program</u> The discussion of biological resources impacts and mitigation measures as addressed under the Development Assistance Program would apply equally to the Housing Program.	(S)	3.2.3-10 ■ Vernal pools which are in the direct line of new roads or new road alignments should be relocated as near their original position and condition as possible. ■ Solid road dividers which would hinder salamander migration should not be used to divide roadways located within one mile of pools or the known migration area. ■ Under-road culverts for Tiger salamanders should be incorporated into the design of new or improved roadways adjacent to all known wetlands.	(I)

Legend:(S) Significant
Adverse Impact(SU) Significant, Unavoidable
Adverse Impact(PS) Potentially Significant
Adverse Impact(I) Insignificant Impact
(B) Beneficial Impact

TABLE 1-1
SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
3.2.4 AIR QUALITY			
<u>Development Assistance Program</u>			
<u>Impact 3.2.4-1</u> <i>New construction as assisted through the Redevelopment Plan Development Assistance Program would result in temporary construction-related activities that could conflict with regional air quality planning efforts.</i>	(PS)	3.2.4-1 Implementing the air emission mitigation measures, inclusive of dust control, as specified in the <i>Air Quality</i> section of this SEIR, and following the measures as specified by the 1996 Bay Area Air Quality Management District CEQA Guidelines would reduce construction-related air quality impacts to an insignificant level.	(I)
<u>Impact 3.2.4-2</u> <i>Impacts related to implementation of the Development Assistance Program would include increases in localized carbon monoxide concentrations at congested intersections and along arterial corridors and freeway mainlines. This is considered to be an insignificant impact.</i>	(I)	3.2.4-2 None Required.	
<u>Public Projects Program</u>			
<u>Impact 3.2.4-3</u> <i>Implementation of the Public Projects Program would stimulate development of roadway and circulation projects that would result in general improvement of the regional air quality. This is a beneficial impact.</i>	(B)	3.2.4-3 None required.	
<u>Housing Program</u>			
The discussion of air quality impacts and mitigation measures (Impact 3.2.4-1 and 3.2.4-2) under the Development Assistance Program would apply equally to the Housing Program.			

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TABLE 1-1
SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN
SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impacts		Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
3.2.5	NOISE			
	<u>Development Assistance Program</u>			
	<u>Impact 3.2.5-1</u> <i>New construction as assisted through the Redevelopment Plan Development Assistance Program would cause temporary increases in construction noise levels.</i>	(S)	3.2.5-1 To minimize construction noise impacts on residents, limit construction hours to between 7:00 a.m. and 7:00 p.m. on weekdays and between 9:00 a.m. and 6:00 p.m. on weekends for projects within 1,600 feet of inhabited dwelling unit(s). Construction equipment shall be properly outfitted and maintained with noise reduction devices to minimize construction-generated noise. Contractors shall locate stationary noise sources away from residents and developed areas, and require use of acoustic shielding with such equipment when feasible and appropriate.	(I)
	<u>Impact 3.2.5-2</u> The increase in traffic resulting from new construction as assisted through the Redevelopment Plan Development Assistance Program, in conjunction with cumulative traffic, would result in traffic noise impacts on <u>proposed</u> Southwest Plan Area developments.	(S)	3.2.5-2 Project developers shall propose noise mitigation consistent with General Plan Noise and Area Plan Community Design Policies to reduce year 2010 exterior noise levels on proposed residential and school land uses to 60 dBA L_{dn} or below, on proposed playgrounds and neighborhood park land uses to 70 dBA L_{dn} or below, and on proposed office buildings and commercial areas to 65 dBA L_{dn} or below.	(I)

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Impacts	Impact Significance Without Mitigation		Mitigation Measures	Impact Significance With Mitigation
<u>Impact 3.2.5-3</u> <i>The increase in traffic resulting from new construction as assisted through the Redevelopment Plan Development Assistance Program, in conjunction with cumulative increased traffic, would result in traffic noise impacts on <u>existing</u> Plan Area land uses.</i>	(SU)	3.2.5-3	The following measures shall be implemented where feasible to reduce noise impacts to existing residences to an insignificant level. ■ Retrofit existing residential land uses with acoustical attenuation materials, or relocate residences, to reduce interior noise levels for the year 2010 to below 45 L_{dn}. ■ Construct sound walls with moveable sound attenuating gates, or berms to reduce exterior noise levels of existing residential land uses for the year 2010 to 60 L_{dn} or below. ■ Construct soundwalls or berms at playgrounds and neighborhood parks to reduce noise levels for the year 2010 to 70 L_{dn} or below. ■ Construct soundwalls or berms at office buildings and commercial areas to reduce noise levels for the year 2010 to 65 L_{dn} or below. Given that the above mitigation measures would require construction expenditures, the likelihood of all existing properties impacted by future noise receiving the necessary mitigation is considered remote. Therefore, where the above measures would be needed to mitigate a significant impact, but are not feasible, Impact 3.2.5-3 would be significant and unavoidable.	(SU)
<u>Impact 3.2.5-4</u> <i>Future transit use along the Northwestern Pacific Railroad Corridor within the Southwest Plan Area could affect ambient noise levels at proposed project sites.</i>	(PS)	3.2.5-4	Implement Mitigation Measure 3.2.5-2.	(I)

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SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
<u>Public Projects Program</u>			
The discussion of noise impacts and mitigation measures under the Development Assistance Program would apply equally to the Public Projects Program.			
<u>Housing Program</u>			
The discussion of noise impacts and mitigation measures under the Development Assistance Program would apply equally to the Housing Program.			

Legend:

(S) Significant
Adverse Impact

(SU) Significant, Unavoidable
Adverse Impact

(PS) Potentially Significant
Adverse Impact

(I) Insignificant Impact
(B) Beneficial Impact

ALTERNATIVES TO THE PROPOSED REDEVELOPMENT PLAN PROJECT

The purpose of the discussion of alternatives in an EIR is to focus on alternatives which are capable of avoiding or substantially lessening any significant environmental effects of a project, even if these alternatives would impede to some degree the attainment of the project objectives or would be more costly. The range of alternatives is to include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects.

No Project Alternative

Under the No Project Alternative there would be no Redevelopment Plan project as currently proposed. Under the No Project Alternative, the Redevelopment Plan would not be implemented and the basic objectives of the Redevelopment Agency would not be realized. A Goal of the Redevelopment Plan is to remove impediments to develop and rehabilitate Redevelopment Subareas A and B by the private sector, thereby alleviating blighting conditions. Neither the Development Assistance Program, Public Projects Program or Housing Program would be implemented. Without the Redevelopment Plan, there would be no publicly sponsored stimulus to remove blighted conditions and there would be no further encouragement to the private sector to make investments that would lead to the further removal of blight within Redevelopment Subareas A and B, and encourage investments in the Southwest Plan Area as a whole.

The lack of resolution of health and safety concerns caused by hazardous materials contamination would continue, the inadequacy of public utilities would continue for a longer period of time than if the Redevelopment Plan were put in place now, circulation deficiencies would likewise continue, and dilapidated unsafe structures would remain in place for an unspecified period of time. It is expected that the unavoidable, significant adverse traffic, visual quality, loss of grassland foraging area and noise impacts would occur under this alternative through cumulative growth in the long term throughout the region, inclusive of the Southwest Plan Area, but at a slower pace in the Southwest Plan Area in the absence of redevelopment and removal of blight.

Under the No Project Alternative, without the Redevelopment Plan project, there would be no public stimulus to implement the Southwest Area Plan and fully realize the benefits of advancing the policies of the City to promote City centered growth to minimize public service costs and protect undeveloped lands from development outside the Urban Boundary. In addition, the City could be hampered in its

endeavor to meet its State mandated housing goals, and to meet its assigned fair share of regional housing needs, including the provision of affordable housing.

Reduced Redevelopment Plan Project

The key question is what level of effort is financially feasible given existing conditions in the Southwest Plan Area and goals of the Redevelopment Agency. A fiscal analysis for the Redevelopment Plan does indicate that the Redevelopment Project Area is financially feasible given the set of assumptions that underlie the fiscal projections. The primary assumptions are that the costs for redevelopment are as projected and that new development activity would occur as the Agency begins to remove impediments to development. Under a reduced funding scenario, it is doubtful that the objectives of the Redevelopment Agency as currently established would likely occur. In other words, under a reduced Redevelopment Plan project as considered here with more limited financing, the removal of blight and impediments to development would also be more limited. The impacts relating to traffic congestion on U.S. 101, visual quality, loss of grassland foraging area and noise would still be expected to occur through development both regionally and within the Southwest Plan Area as well over the long term. The magnitude of the beneficial impacts of the Redevelopment Plan project as explained above under the No Project Alternative would not be expected to be as great, but could still occur to a lesser degree.

Expanded Redevelopment Plan Project

Given the 30 year time frame for Redevelopment Plan implementation, how the various potential funding sources other than tax increment financing will play out is uncertain at this time. As required under California Redevelopment Law, the Redevelopment Agency will continue to look to other funding sources to assist in the redevelopment effort. Therefore, to the degree that additional funds may actually become available through alternative funding sources, the Redevelopment Plan may be able to be expanded to finance, for example, additional infrastructure projects beyond that currently anticipated in the proposed Redevelopment Plan. Should this be the case, which is somewhat speculative, there could be corresponding incentives for the private sector and area residents and businesses to invest in new projects and further assist in the revitalization of the Southwest Plan Area.

Under this scenario however, the unavoidable significant adverse traffic congestion impacts on U.S. 101, visual quality impacts, loss of grassland foraging area for wildlife and traffic noise impacts on

existing land uses would still occur. This would be the result of cumulative as well as Southwest Plan Area growth anticipated under the City's General Plan and Southwest Area Plan. The benefits of the Redevelopment Plan as described above under the No Project Alternative would still occur, as opposed to the reduced level of benefits that would occur under the Reduced Redevelopment Plan Project Alternative. All other significant impacts as identified in this SEIR could be mitigated to levels of insignificance through implementing the mitigation measures as identified in the respective technical sections of this document.

Environmentally Superior Alternative

It is clear the No Project Alternative would not be an Environmentally Superior Alternative because there would be no stimulus to remove blighting conditions and the identified significant impacts would still occur. In addition, neither the Reduced or Expanded Redevelopment Plan Project Alternative would appear to be an Environmentally Superior Alternative, given that the unavoidable significant impacts identified would remain in either case. Because it was shown that most significant impacts can be mitigated to levels of insignificance for the Redevelopment Plan project as proposed, because the Reduced and Expanded Redevelopment Plan Projects appear ineffective and speculative respectively, and because there are specified environmental benefits with respect to the Redevelopment Plan project as proposed, the Environmentally Superior Alternative is considered to be the Redevelopment Plan project as proposed with all of the mitigation measures identified in this SEIR factored into the project.

2. PROJECT DESCRIPTION

2.1 REDEVELOPMENT PROJECT LOCATION

The southwest portion of Santa Rosa is generally described as the area west of U.S. 101, south of State Highway 12, and north and east of the City's Urban Boundary. Figure 2-1, *Regional Location Map*, indicates the general location of the Redevelopment Project Area within the context of the north Bay Area. Figure 2-2, *Site Location Map*, identifies two Subareas of the Redevelopment Project Area (Redevelopment Subareas A and B), with respect to the southwest portion of the City of Santa Rosa.

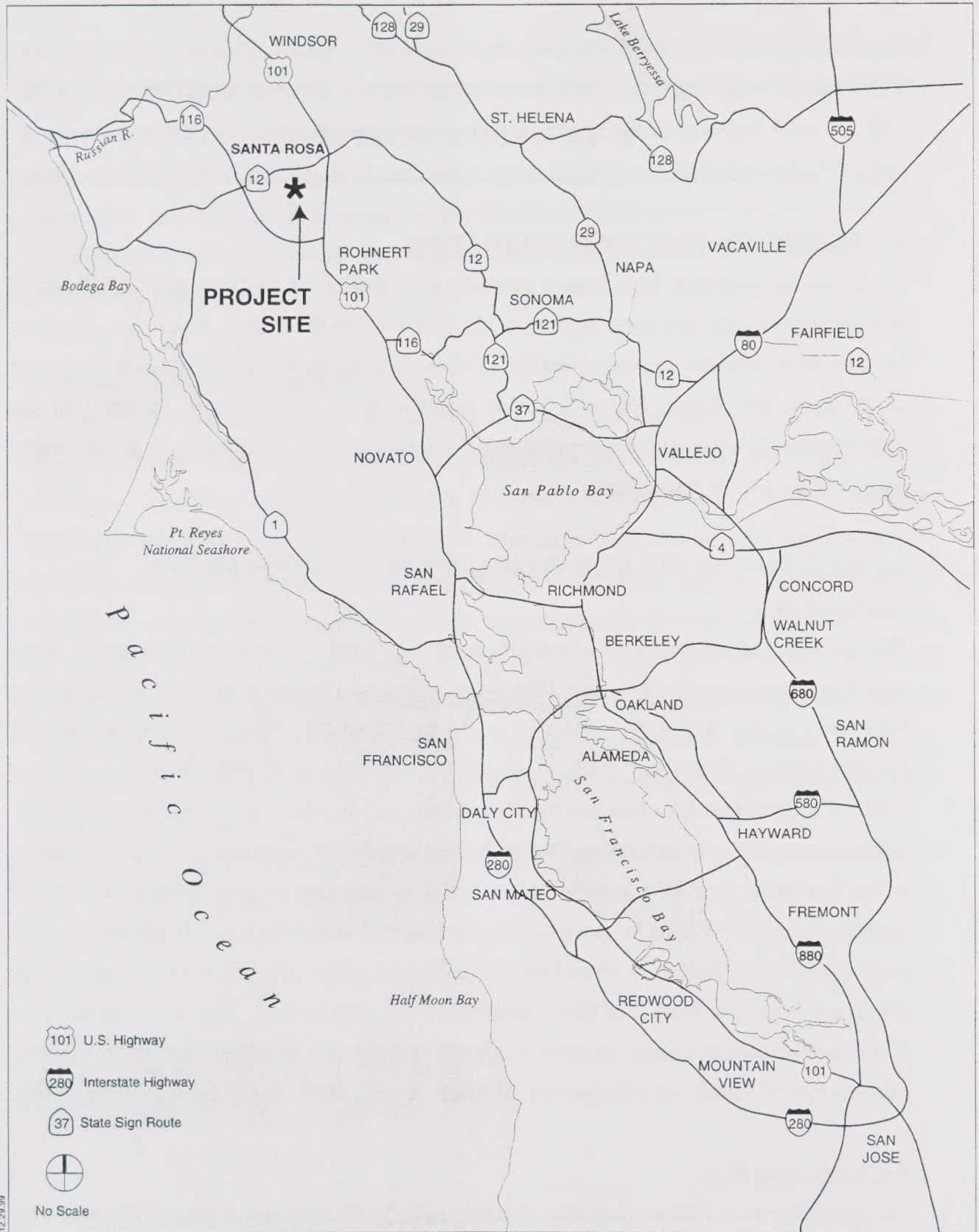
2.2 BACKGROUND AND REDEVELOPMENT PROJECT DESCRIPTION

Southwest Area

The Southwest Santa Rosa area became a focus of the City's attention in 1991 when the Santa Rosa City Council adopted a General Plan to guide the City's development to the year 2010. In 1991, the City also began the preparation of the Southwest Area Plan with the formation of a Citizens Advisory Committee which culminated with the adoption of the Southwest Area Plan in 1994.¹ The Southwest Area Plan was required by the City's General Plan "... to comprehensively address issues unique to [the] area and refine the land use plan for [the] area ..." Major objectives of the Southwest Area Plan were to create livable neighborhoods, plan future transportation systems and provide a basis for infrastructure funding and implementation. In addition, during preparation of the Southwest Area Plan, 35 individual project proposals located within the Southwest Area Plan study area were submitted to the City of Santa Rosa for consideration. These development proposals included residential projects, mixed use developments, schools, public service facilities and infrastructure of roads, sewers, water supply and drainage projects.

Southwest Area Plan

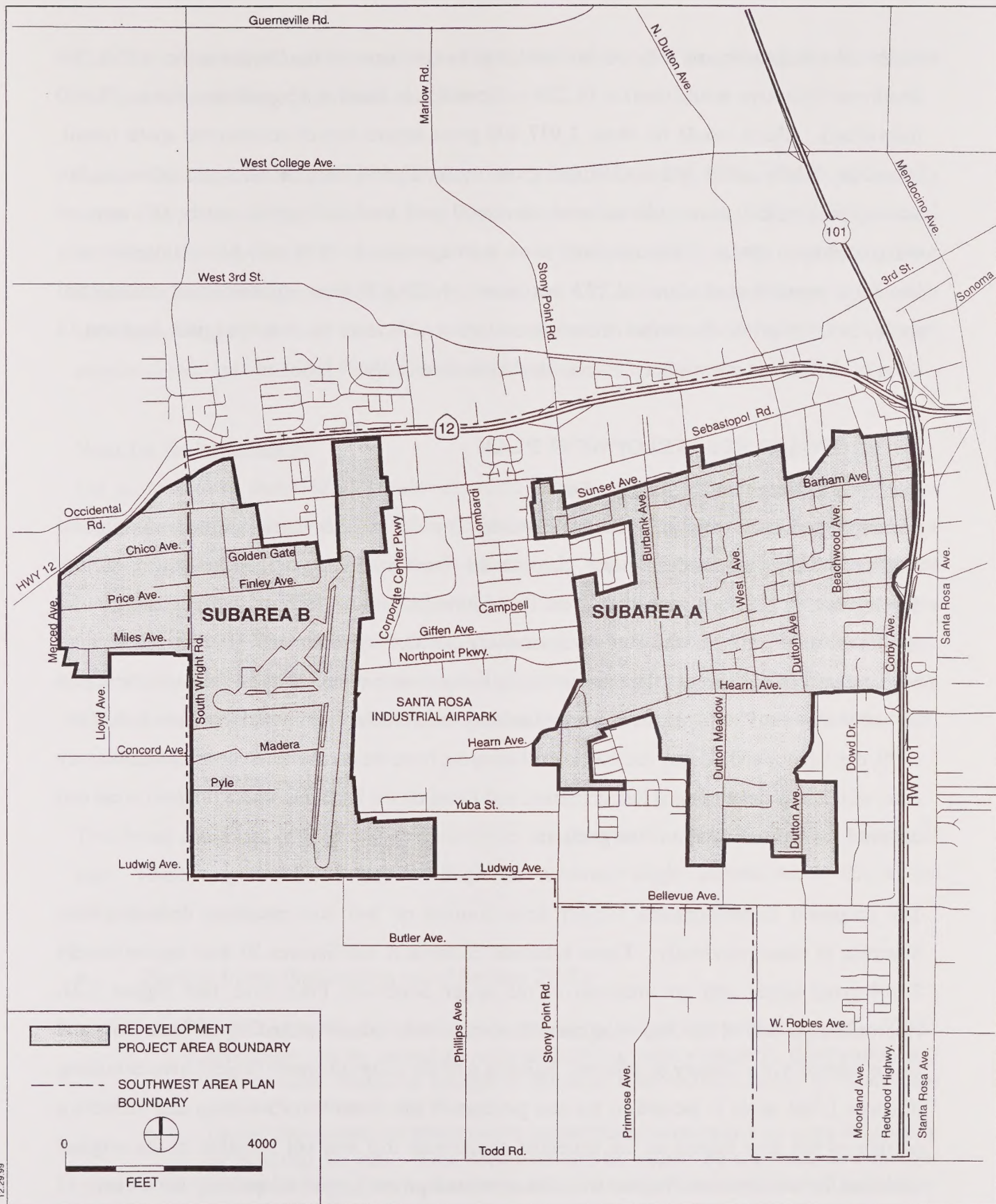
The Southwest Area Plan encompasses approximately 3,800 acres and is generally bounded by U.S. 101 on the east, State Highway 12 on the north and the Santa Rosa Urban Boundary on the



12.29.99

SOURCE: EIP Associates

SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN
FIGURE 2-1: REGIONAL LOCATION MAP



SOURCE: Keyser Marston Associates, Inc. Filename: Survey Area2.ai; 9/21/99

SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN
FIGURE 2-2: SITE LOCATION MAP

south and east (see Figure 2-2). At buildout, and as envisioned in the Southwest Area Plan, the Southwest Plan Area would contain 14,229 residential units housing a population of about 38,320 individuals. There would be about 7,937,400 gross square feet of commercial space (retail, industrial, R&D, office space), 555,000 gross square feet of institutional space (schools, fire station, post office), about 148 acres of developed park land and approximately 150 acres of designated open space. This compared to an existing count in 1994 of 4,616 residential units housing a population of about 14,122 individuals, 4,629,400 gross square feet of commercial space, 249,520 gross square feet of institutional space, 25, acres of developed park land and 14 acres of designated open space. Vacant land amounted to about 1,424 acres.

2.3 PROPOSED REDEVELOPMENT PLAN

Proposed Redevelopment Project Area

Although there has been a great deal of developer interest in the Southwest Plan Area, blighted conditions have remained a major concern for local residents and businesses, thwarting development in the Southwest Plan Area. In an attempt to move forward with revitalization of the Southwest Plan Area, the City of Santa Rosa and County of Sonoma have agreed to work cooperatively in a joint redevelopment project to bring about a comprehensive redevelopment plan for the Southwest Plan Area.² After a preliminary study of the Southwest Plan Area in August, 1999, the Agency and County decided to exclude areas from the Southwest Redevelopment Survey Area where new development had occurred, and focus on the locations where blighted areas and the need for redevelopment is the greatest.

The proposed Redevelopment Project Area consists of two noncontiguous Redevelopment Subareas as noted previously. These subareas (Subarea A and Subarea B) total approximately 2,014 gross acres, and are subareas of the larger Southwest Plan Area (see Figure 2-2). Approximately half of the Redevelopment Project Area is located in the City of Santa Rosa and half is located in the County of Sonoma. Subarea A of the Redevelopment Project Area consisting of about 1,084 acres is located in the east portion of the Southwest Plan Area and includes a portion of the area known as the Roseland community that was not included in the original Roseland Redevelopment Project, which is a redevelopment project adopted by the County of Sonoma on November 27, 1984 immediately to the north. Subarea A is generally bounded by

U.S. 101 on the east, Sunset Avenue on the North, the area between Hearn and Bellevue Avenues on the south, and Stony Pont Road on the west.

Subarea B of the Redevelopment Project Area consisting of about 930 922 acres is located mostly in the west portion of the Southwest Plan Area. Subarea B extends west of South Wright Road to Merced Avenue outside the Southwest Plan Area. Subarea B is generally bounded by State Highway 12 on the north, the east property line of the Air Center, Ludwig Avenue on the south and South Wright Road and Merced Avenue on the west. Subarea B includes the residential neighborhoods around South Wright Road and the former Santa Rosa Air Center.³

Need for Redevelopment

For an area to be included in a redevelopment project area, it must be characterized by a combination of blighting conditions. The Southwest Plan Area developed as an agricultural area in the early 1900's and has gradually become increasingly more urbanized. Today, Redevelopment Subareas A and B are 93% urbanized⁴, and based on preliminary feasibility work, numerous blighting conditions exist which are substantial enough to cause a reduction or lack of proper utilization to such an extent that it constitutes a physical and economic burden on the community which cannot reasonably be expected to be reversed by private enterprise or governmental action, or both, without redevelopment.

Two broad categories of blighting characteristics are described in Community Redevelopment Law. These categories include physical blight and economic blight, summarized as follows for informational purposes:

- Physical Blight (Subdivision (a) of Section 33031):
 - Buildings in which it is unsafe or unhealthy for persons to live or work. These conditions can be caused by serious building code violations, dilapidation and deterioration, defective design or physical construction, faulty or inadequate utilities, or other similar factors.
 - Factors that prevent or substantially hinder the economically viable use or capacity of buildings or lots. This condition can be caused by a substandard design, inadequate size given present standards and market conditions, lack of parking or other similar factors.

- Adjacent or nearby uses that are incompatible with each other and which prevent the economic development of those parcels or other portions of the project area.
 - The existence of subdivided lots of irregular form and shape and inadequate size for proper usefulness and development that are in multiple ownership.
- Economic Blight (Subdivision (b) of Section 33031):
- Depreciated or stagnant property values or impaired investments, including but not necessarily limited to, those properties containing hazardous wastes that require the use of agency authority.
 - Abnormally high business vacancies, abnormally low lease rates, high turnover rates, abandoned buildings, or excessive vacant lots within an area developed for urban use and served by utilities.
 - A lack of necessary commercial facilities that are normally found in neighborhoods, including grocery stores, drugstores and banks and other lending institutions.
 - Residential overcrowding or an excess of bars, liquor stores, or other businesses that cater exclusively to adults that has led to problems of public safety and welfare.
 - A high crime rate that constitutes a serious threat to the public safety and welfare.

Proposed Redevelopment Project Programs⁵

The Redevelopment Agency's proposed project of redevelopment is intended to serve as a catalyst to remove blighting conditions. The proposed redevelopment project includes 1) a Development Assistance Program, 2) a Public Project Program, and 3) a Housing Program. These redevelopment project programs include Economic Revitalization designed to eliminate impediments to private sector investment in the Redevelopment Project Area and Neighborhood Revitalization designed to improve and upgrade existing neighborhoods in the Redevelopment Project Area. It is believed that as the most significant blighting conditions are reduced that further private sector investment will occur in the Redevelopment Project Area and lead to the further removal of blight.

The Redevelopment Agency's redevelopment programs are conceptual in nature. Due to the lengthy time frame for implementing the Redevelopment Plan (30 years), the programs of

redevelopment are intended to be flexible and provide the capability to respond to changes and private sector interests in the Redevelopment Project Area.

■ 1) Development Assistance Program

The development assistance program is intended to result in the removal of deteriorated structures, spur the creation of new commercial development and assist in increasing property values.

Under this program, the Redevelopment Agency could assist with land acquisition, site preparation, offsite utility installation, disposition of property and relocation assistance to existing property owners and tenants. The Redevelopment Agency could also assist with hazardous remediation under this program. This program would address a variety of physical blighting conditions including deterioration and dilapidation and defective design.

The program would also assist in the alleviation of economic blighting conditions such as stagnant property values and the removal of hazardous wastes. It is considered that the Redevelopment Agency may assist in the conversion of the Air Center to a mixed-use development site by assisting in the removal of concrete runways and providing funding for some portion of hazardous remediation.

■ 2) Public Projects Program

The public project program focuses on infrastructure projects and is intended to assist in the alleviation of faulty or inadequate utilities in the redevelopment project area, thereby improving health and safety, removing impediments to private sector investments and providing for an environment for revitalization.

The Redevelopment Agency intends to assist in implementing a series of public projects within the Redevelopment Project Area that relate to either the Economic Revitalization program or the Neighborhood Revitalization program. Public projects related to Economic Revitalization involve the installation of infrastructure identified in the Southwest Area Plan. Public projects in this category include major roadway projects and modifications to the water, sewer and storm drain systems. Although major portions of the costs for these projects will be provided by the private sector through the payment of development impact fees, Agency assistance is needed to provide gap financing.

The public projects related to Neighborhood Revitalization involve the installation of infrastructure to cure existing deficiencies in the Redevelopment Project Area and alleviate blight caused by faulty or inadequate utilities. Major modifications to the water system are needed so that City water will be available to the Roseland area. The Redevelopment Agency also intends to assist property owners and renters to hook up to the City sewer system and discontinue the use of the private septic system. In addition to water and sewer projects, a series of modifications are planned to the local street system, the street lighting system and the installation of sidewalks, curbs and gutters.

■ 3) Housing Program

One of the major goals of Community Redevelopment Law is for redevelopment to assist in the creation, preservation and expansion of low and moderate income housing in redevelopment project areas.

The Economic Revitalization program will include assistance to spur new, previously planned housing construction in the Redevelopment Project Area. New housing construction may be fostered in conjunction with the Development Assistance Program. The Redevelopment Agency may also provide subsidies to close the gap between the cost of building and operating market rate housing and the amount that a low and moderate-income family can afford to pay.

The Neighborhood Revitalization program will provide assistance to current property owners and renters through a variety of rehabilitation activities. Rehabilitation assistance could take the form of low interest or deferred payment loans for a variety of interior or exterior changes. It could also include loans that provide the source for funding to hook up to the City's water and sewer system.

It is intended that new development activity will occur in the Redevelopment Project Area as envisioned in the Southwest Area Plan as the Redevelopment Agency begins to remove impediments to development.

Redevelopment Project Programs and Environmental Review

While the Development Assistance Program concentrates on providing funding for land acquisition, deteriorated structure removal, site preparation, relocation assistance, hazardous materials remediation and related activities, the Housing Program concentrates on assistance to build, improve and preserve low and moderate income housing. These programs are general in character and specific participants have not been identified at this time. On the other hand, the Redevelopment Public Projects Program directly focuses on implementing infrastructure construction.

It should be noted here, that because the overall redevelopment project is split into three separate programs as discussed above, the assessment of environmental impacts in this SEIR is organized to follow the format of the three programs. For example, each technical section of the SEIR (i.e., Land Use, Biological Resources, etc.), contains a sequential analysis of the impacts relating to 1) the Development Assistance Program, 2) the Public Projects Program and 3) the Housing Program.

Because the Public Projects Program emphasizes the construction of infrastructure, in lieu of redevelopment assistance for privately sponsored projects such as structure removal, relocation assistance and loans for structure rehabilitation and utility hookups, the majority of direct cause-and-effect environmental impacts would be expected to occur under the Public Projects Program. The Development Assistance and Housing Programs would be expected to indirectly generate environmental impacts because these programs provide Redevelopment financing that would stimulate and remove obstacles to development by the private sector, for example, development of the 35 proposed projects addressed in the Southwest Area Plan EIR or other new projects that may be proposed within the Southwest Plan Area in the future.

For these reasons, much of the discussion of direct environmental impacts and mitigation measures falls under the Public Projects Program title, with the discussion of secondary impacts and mitigation measures falling under the Development Assistance Program and/or Housing Program in general. Although the potential environmental impacts resulting from all three programs are examined in this SEIR, it is therefore important to document the magnitude and extent of public projects as envisioned within the Southwest Area Plan in order to assess the potential environmental impacts of implementing the overall Redevelopment Plan project.

While many of the infrastructure projects that would be implemented through redevelopment financing are outside of Redevelopment Subareas A and B, the inclusion of redevelopment financing for infrastructure throughout the Southwest Plan Area would assist the Redevelopment Agency in achieving its goals to alleviate blight, facilitate development and carry out the Redevelopment Agency's purposes in Redevelopment Subareas A and B.

Redevelopment activities would occur over a 30 year period. As noted previously, the installation of public projects is intended to specifically and directly remove impediments to private sector investment in the Redevelopment Project Area and provide an environment for revitalization of the Redevelopment Project Area. The public projects are as presented in the Southwest Area Plan and are all basically infrastructure related and grouped into four categories: 1) roadway and circulation projects, 2) water supply projects, 3) sanitary sewer projects, and 4) storm drainage projects.

Development within the Southwest Plan Area will require major modifications and additions in streets, sanitary sewers, storm drainage and water delivery systems. The Southwest Area Plan itself describes the basic area-wide infrastructure projects required, and provides a phasing plan which relates the development of specific portions of the Southwest Plan Area to certain infrastructure projects.

New infrastructure will be provided by either developers as development occurs, or by the City, County of Sonoma and local utility companies (i.e., Pacific Bell, P.G.&E, Cable), and State agencies (i.e., Caltrans). Some infrastructure projects such as roadway interchange projects will be combined as joint efforts of local government in conjunction with State and/or Federal Programs. "Backbone", or major infrastructure projects as described in the Southwest Area Plan, that may be assisted through the Redevelopment Plan would be provided by government entities or utility companies and include the following:

- Major roads and circulation projects of arterial streets, highway projects, highway interchanges and ramps/overpasses.
- Water mains 12 inches in diameter or larger.
- Major storm drainage projects of channels and conduits.
- Sanitary sewer trunk lines 15 inches in diameter or larger.
- Electricity, natural gas and communications systems.

A complete inventory of required infrastructure projects is contained in the Southwest Area Plan and Appendix A of this SEIR. The following discussion provides an overview of the planned infrastructure projects to be facilitated by the proposed Redevelopment Plan on which this SEIR focuses.

- 1) Roadway and Circulation Projects
Roadway and circulation projects will be an important component to facilitate development within the Southwest Plan Area as envisioned in the Southwest Area Plan. Non-auto oriented circulation facilities amount to an insignificant percentage of the existing circulation system in the Southwest Plan Area. In addition, the street system in the Southwest Plan Area is formed by a grid of arterial county roads wherein local east-west

streets do not directly connect with one another. The grid framework has not been completed in the west portion of the Southwest Plan Area due to the presence of the former Naval Air Station, as well as agricultural uses of the land.

The need for roadway and circulation projects would be reinforced as a result of new development, the implementation of which would be assisted through the Redevelopment Plan. New development will be required to make dedications of right-of-way for both existing and new streets, landscaping for median strips and roadway shoulders, and for the installation of traffic signals, signs, separate bikeways and sidewalks for pedestrians as called for in the Southwest Area Plan. Most new streets will have sidewalks. Bicycle lanes will be incorporated in the design of most major streets in accordance with the City's Bikeways Master Plan. Additionally, development will be responsible for providing both access and modifications and/or additions to multi-use pathways along Roseland and Colgan Creek Corridors, as well as the Sebastopol-Santa Rosa railroad right-of-way as called for in the Southwest Area Plan.

For environmental review purposes, the main concern with road and circulation projects is the need to acquire additional right-of-way for widening or new construction. Widening or new construction could adversely impact existing land uses, wetlands or wildlife, or require property condemnation. See Figure 2-3, *Future Circulation Network*, for an overview of the future circulation network in the Southwest Plan Area as envisioned in the Southwest Area Plan, portions of which would be assisted through the Redevelopment Plan.

A complete listing of proposed roadway and circulation projects is contained in the Southwest Area Plan Circulation and Transportation Chapter and Appendix A of this SEIR.

■ 2) Water System Projects

All water supply pipes will be installed within existing and proposed road rights-of-way, with the exception of branch water mains required to serve individual residential or commercial facilities. The sizing of water lines within the Southwest Plan Area depends on the timing of the Sonoma County Water Agency's 36-inch diameter water intertie between the West Santa Rosa Transmission Main and the Petaluma Aqueduct. If the intertie is not constructed before substantial development in the Southwest Plan Area occurs, water lines may be required to be upsized to provide adequate fire flows. The Southwest Area Plan Infrastructure Chapter includes policies that address the ultimate water main sizing required for individual projects based upon the number of residential units or amount of commercial space proposed for each project.

A complete listing of proposed water supply projects is contained in the Southwest Area Plan Infrastructure Chapter and in Appendix A of this SEIR. Figure 2-4, *Water System*, provides an overview of the future water system network in the Southwest Plan Area as envisioned in the Southwest Area Plan, portions of which would be assisted through the Redevelopment Plan.

SOUTHWEST AREA PLAN INFRASTRUCTURE

FUTURE CIRCULATION NETWORK



- Local Roads (conceptual locations)
- ||||| Rural Road (2 lanes)
- Improved Collector (2 lanes)
- Improved Arterial (4 lanes)
- ===== Improved Expressway or Freeway (6 lanes)
- Two-Way Left Turn Lane added
- Northwestern Pacific Railroad
- [R] Rail Stations

Note: Additional rail stops may be incorporated in the future (See Area Plan Figure 7a)

Figure 2-3: Future Circulation Network



February, 1994
1500' 0 1500'
SCALE IN FEET
DEPARTMENT OF COMMUNITY DEVELOPMENT



■ 3) Storm Drain Projects

The Sonoma County Water Agency does not have a drainage plan for the entire Southwest Plan Area. However, areas within the Southwest Plan Area have been identified that have drainage problems for which solutions have been proposed by the Water Agency. The proposed drainage projects were established in accordance with full buildout under the Santa Rosa General Plan land use designations.⁶ As necessary, runoff factors and drainage designs will be amended to reflect buildout under the Southwest Area Plan land use designations at the time funding for the storm drain projects is approved and/or developed.

Most of the drainage projects would be located under existing roads to replace or augment existing drainage facilities. However, with respect to SEIR preparation, some proposed facilities may not be located within existing road rights-of-way and would constitute new construction projects within vacant lands. An example of such a project would be the recently constructed Roseland Channel Expansion project in Redevelopment Subarea B.

For a complete list of drainage projects, refer to the Infrastructure Chapter of the Southwest Area Plan or Appendix A of this SEIR. Figure 2-5, *Storm Drainage*, provides an overview of the future storm drainage network in the Southwest Plan Area as envisioned in the Southwest Area Plan, portions of which would be assisted through the Redevelopment Plan.

■ 4) Sanitary Sewer Projects

The sanitary sewer system has been designed by the City of Santa Rosa to handle the sanitary sewer needs of the Southwest Plan Area at buildout. Local service lines and collectors required to serve individual residential or commercial facilities would connect to existing trunk facilities and be located under existing and/or proposed streets.

For a complete discussion of sanitary sewer projects, refer to the Infrastructure Chapter of the Southwest Area Plan. Figure 2-6 provides an overview of the future sanitary sewer network in the Southwest Plan Area as envisioned in the Southwest Area Plan, portions of which would be assisted through the Redevelopment Plan.

Financing

The Redevelopment Plan would authorize the Redevelopment Agency to fund activities from a variety of sources, including: financial assistance from the City and County; the State and the Federal Government; tax increment funds; development impact fees; Agency bonds; donations; special assessment districts; interest income; loans from private financial institutions; the lease or sale of Agency owner property; and any other legally available public or private sources of funding. The Redevelopment Agency is also authorized to obtain advances, borrow funds and create indebtedness in various forms. This includes the issuance of bonds. The indebtedness and bonds can be repaid from tax increment revenues or other funds available to the Redevelopment

The first part of the paper discusses the importance of the research and the objectives of the study. It also provides a brief overview of the literature on the topic and the methodology used in the study.

The second part of the paper presents the results of the study and discusses the implications of the findings. It also provides a brief overview of the literature on the topic and the methodology used in the study.

The third part of the paper discusses the limitations of the study and provides suggestions for future research. It also provides a brief overview of the literature on the topic and the methodology used in the study.

The fourth part of the paper provides a conclusion and summarizes the main findings of the study. It also provides a brief overview of the literature on the topic and the methodology used in the study.

The fifth part of the paper provides a list of references and a list of figures and tables. It also provides a brief overview of the literature on the topic and the methodology used in the study.

The sixth part of the paper provides a list of references and a list of figures and tables. It also provides a brief overview of the literature on the topic and the methodology used in the study.

SOUTHWEST AREA PLAN INFRASTRUCTURE

WATER SYSTEM



-  Aqueduct with Turnouts
-  Proposed Water Aqueduct Intertie & Turnouts (conceptual locations)
-  Existing Water Mains : 12"+
-  Proposed Water Mains : 12"+ (conceptual locations)
-  Proposed Booster Station Site (conceptual locations)

Figure 2-4: Water System



February, 1994

1500' 0 1500'

SCALE IN FEET

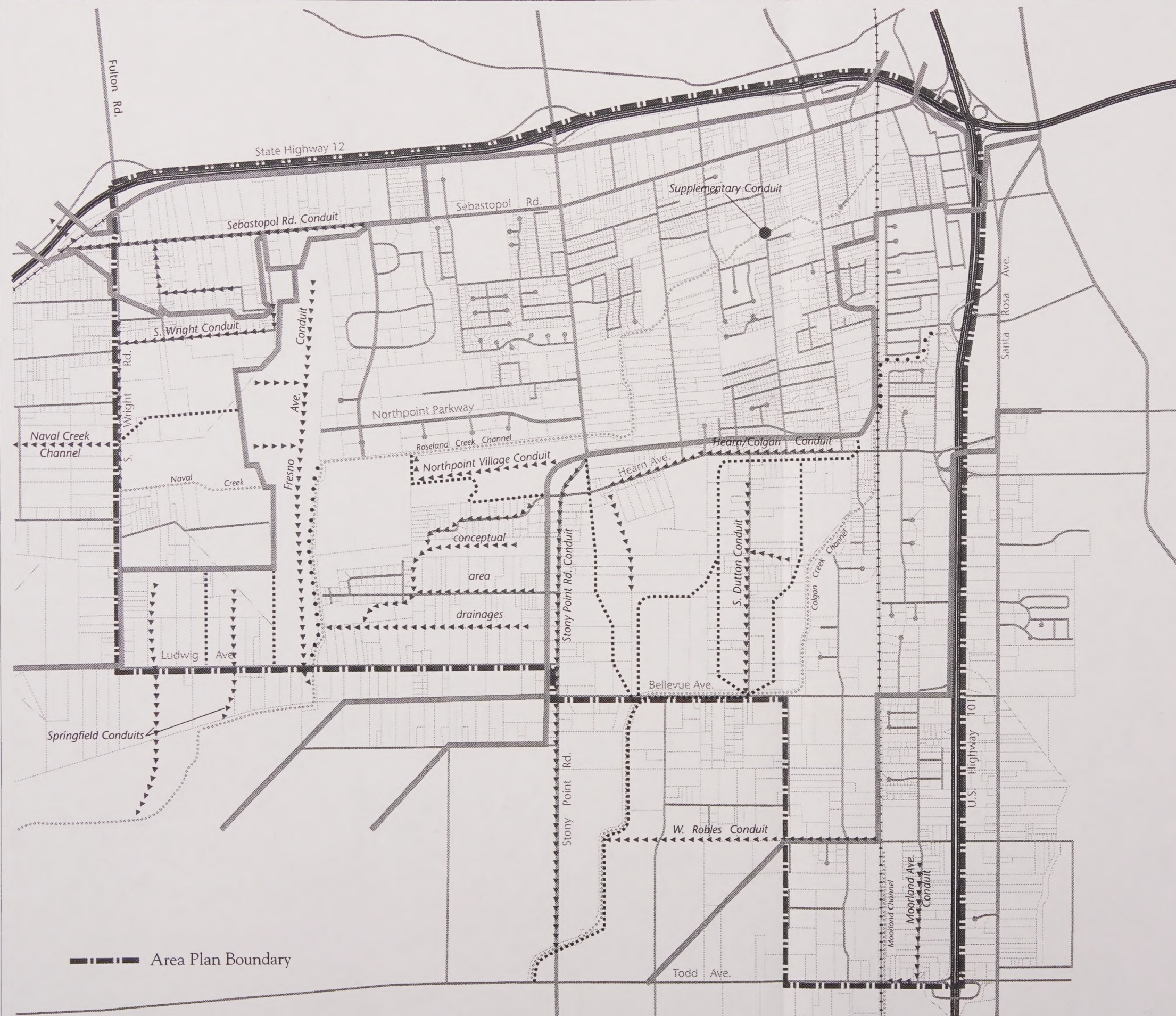
DEPARTMENT OF COMMUNITY DEVELOPMENT



SOUTHWEST AREA PLAN

INFRASTRUCTURE

STORM DRAINAGE



- Creeks & Drainageways
- Watershed Boundaries
- Tributary Area Boundary
- Storm Drainage Conduits
(conceptual locations)
- Improvements to existing channels

Figure 2-5: Storm Drainage



February, 1994

1500' 0 1500'

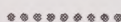
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DEPARTMENT OF COMMUNITY DEVELOPMENT



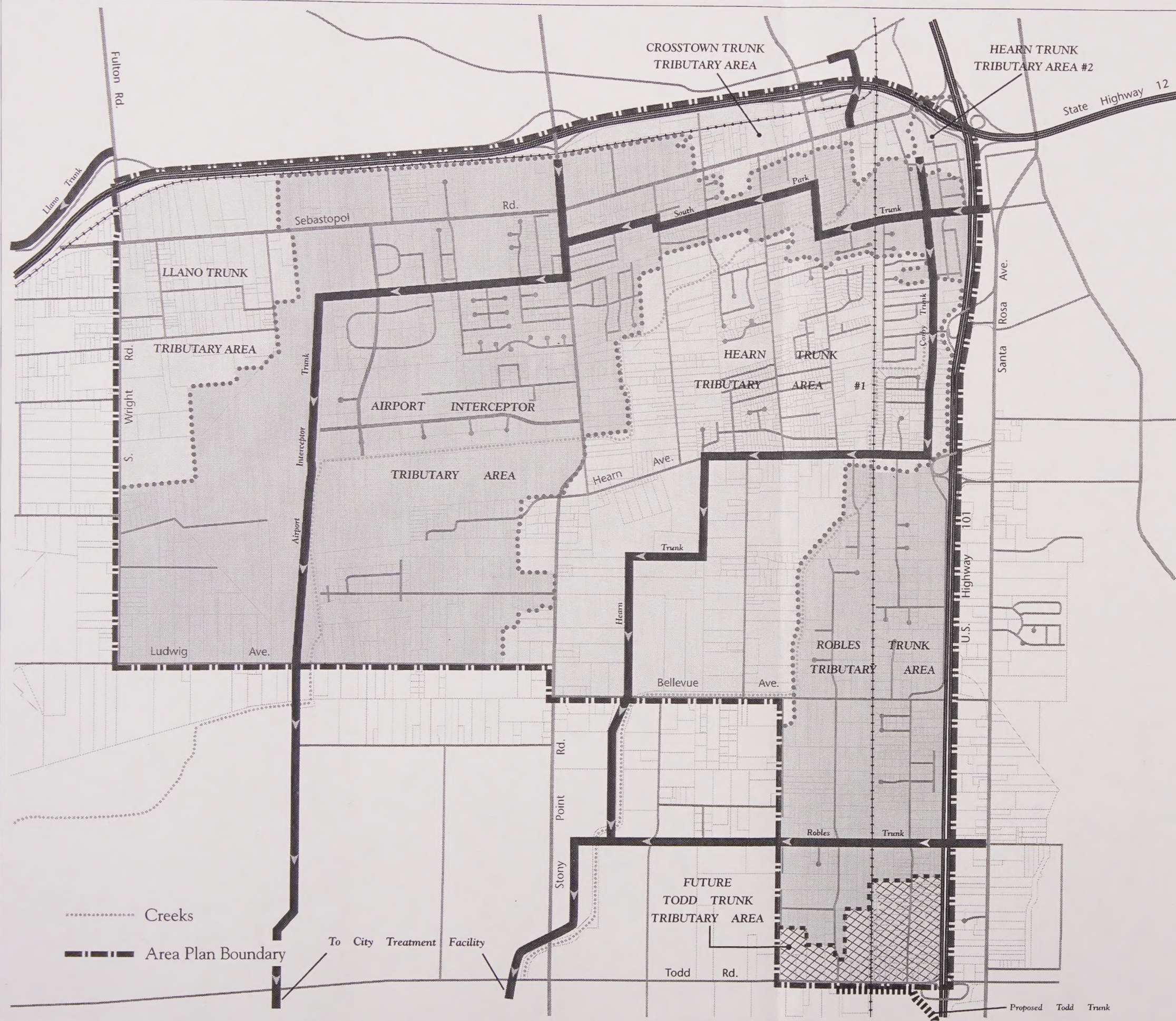
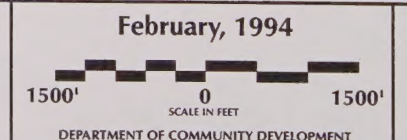
SOUTHWEST AREA PLAN INFRASTRUCTURE

SANITARY SEWER SYSTEM

-  Existing Trunk Sewer Lines
-  Trunk Sewer Tributary Area Boundary
-  Proposed Trunk Lines
-  Future Todd Trunk Tributary Area Boundary
-  Additional Area Currently Serviced by Robles Trunk

Notes: Tributary Areas & Sewer lines may extend beyond the Area Plan Boundary

Figure 2-6: Sanitary Sewer System



Agency. The City and County may also provide assistance to the Agency to fund the redevelopment project, as it is able to.

2.4 REQUIRED APPROVALS

Projects constructed under the Redevelopment Plan would require the following approvals. It is noted that these approvals will vary depending on the type of project (road construction, sewer construction, storm drain construction) and location:

City of Santa Rosa

The Redevelopment Agency of the City of Santa Rosa will be approving various activities and agreements for implementing the Redevelopment Plan project (i.e., Acquisition Agreements, Disposition and Development Agreements, Housing Agreements, etc.). The Agency will also be approving all public improvement projects financed with tax increment monies. In addition to the required approvals for construction projects, the approvals of the Redevelopment Plan include:

- City of Santa Rosa adoption of the Redevelopment Plan.
- Redevelopment Agency of the City of Santa Rosa approval of the Redevelopment Plan.
- County of Sonoma approval of the Redevelopment Plan.

The infrastructure projects would need to comply with City plans and specifications for roadway/utility design. A series of permits and approvals from public agencies would be required before these projects could be constructed. For example, the City Council would need to approve the projects and adopt Plan Lines (alignments) for proposed new roads.

The City of Santa Rosa would need to issue encroachment permits for construction to occur within public rights-of-way. City grading permits would also be required in order to begin construction of the infrastructure projects.

Plans and specifications for the infrastructure projects would be reviewed and approved by the City in accordance with the adopted mitigation measures, bids would be awarded by the City for construction, and final acceptance of the projects would be given after monitoring implementation of the required mitigation measures and final inspection.

Sonoma County

Prior to the construction of individual projects in unincorporated areas where the County has received applications, regardless of redevelopment involvement, project processing and permitting would be required through the County Permit and Resource Management Department (PRMD), and any other County departments as determined by PRMD. Project review and approvals would also be required through the Board of Zoning Adjustments and Board of Supervisors. Environmental review of proposed projects under CEQA would also be required as determined by PRMD unless such projects are determined to be categorically exempt.

Local Agency Formation Commission

Prior to construction of individual projects for which the City has received applications, regardless of redevelopment involvement, the City Council will need to adopt rezoning designations and individual property owners will need to submit annexation applications (where applicable) to the Local Agency Formation Commission (LAFCO) for approval.

Under State law, the LAFCO applications require a "Plan for Providing Public Services", the purpose of which is to enable the Commission to determine the City's ability to provide services in a timely and financially feasible manner. LAFCO's requirement for the "Plan for Providing Services" may be determined to be met by submission of this SEIR because of the infrastructure information included in the document.

Sonoma County Water Agency

Because the Sonoma County Water Agency owns right-of-way along Roseland Creek and Colgan Creek and Naval Creek within the Southwest Plan Area, a revocable license will be required prior to any work performed within Water Agency right-of-way. The Water Agency will need to review any project development plans (regardless of redevelopment involvement), for these areas prior to construction. Any creekside greenway plans will need to be coordinated with the Water Agency to insure continued flood control protection, hydrological capacity and continued maintenance access.

The Sonoma County Water Agency would also review project design plans for compliance with County Flood Control Design Criteria to ensure that the projects would not increase the potential for flooding.

State Department of Transportation (Caltrans)

Because U.S. 101 and Highway 12 are State facilities, owned and operated under the jurisdiction of Caltrans, all phases of the Bellevue Avenue/U.S. 101, Hearn Avenue/U.S. 101 and Fulton/Wright/Highway 12 interchange projects, from inception through construction and final acceptance, must be accomplished in accordance with Caltrans policies and procedures. Caltrans would require review and approval of a Caltrans Project Report (after EIR certification), for the interchange projects and must request approval of any new freeway connections from the California Transportation Commission. A cooperative agreement between the City and the State (Caltrans) would be required for design and construction that will specify both agencies' respective responsibilities. Caltrans would also review and approve the plans and specifications for the interchanges and overcrossings and would issue an encroachment permit for construction. A freeway agreement would also be required between the City and Caltrans to incorporate the approved interchange plans into the State's system.

Metropolitan Transportation Commission (MTC)

MTC, which has jurisdiction over the regional transportation system, must also review Federally funded or approved transit or highway projects for conformity with the region's State Implementation Plan for air quality. MTC has developed a regional model for evaluation of potential ozone exceedences within the San Francisco Bay Area Air Basin that may result from cumulative development and implementation of the Regional Transportation Plan and Transportation Improvement Program.

Regional Water Quality Control Board (RWQCB)

Regulations pertaining to stormwater discharges associated with construction activity were issued by the U.S. Environmental Protection Agency in 1990. The regulations prevent the pollution of storm water through the control of erosion, sedimentation and toxic or hazardous materials at

construction sites. These regulations are administered by the Regional Water Quality Control Boards through the National Pollution Discharge Elimination System (NPDES) Program.

Pollution reduction design is required as part of the permanent drainage system for the post-construction period as well as for the construction phases of a project. Certain categories of industrial facilities are required to obtain NPDES permits for operation of the facilities. A permit is required for construction projects such as road extensions, overcrossings, interchanges or development projects that are greater than five acres in extent, thus applying to many portions of the Southwest Area Plan projects. A Storm Water Pollution Prevention Plan is required that identifies the sources of sediment and other pollutants, and ensures the reduction of sediment and other pollutants in the storm water discharged from a construction site. A monitoring program is required to aid the implementation of, and assure compliance with the Pollution Prevention Plan.

The RWQCB also has jurisdiction over and oversees the remediation of documented hazardous materials sites. The RWQCB jurisdiction applies to sites where groundwater resources are threatened by hazardous materials contamination.

California Department of Fish and Game/U.S. Army Corps of Engineers

Approvals from the California Department of Fish and Game would be required for any necessary streambed alteration agreements. Additionally, the U.S. Army Corps of Engineers would need to issue a section 404 Permit under the Clean Water Act, and Section 10 Permit under the Rivers and Harbors Acts for any alterations to wetlands. These subjects are discussed further in SEIR Section 3.2.3, *Vegetation and Wildlife*.

2.5 HAZARDOUS MATERIALS

There are sites in the Redevelopment Plan Area which are identified as hazardous waste sites pursuant to Government code Section 65962.5. A description of those sites is provided in detail in Section 3.1.8 of this SEIR, *Hazardous Materials*.

Notes - Project Description

1. City of Santa Rosa, Department of Community Development, *Southwest Area Plan, A Plan for the Future*, June 21, 1994. For further information, see also City of Santa Rosa, Department of Community Development, *Southwest Santa Rosa Area Plan, Final Environmental Impact Report*, (Revised Draft EIR), EIP Associates, March, 1994.
2. The County Board of Supervisors by Ordinance provided the Santa Rosa Redevelopment Agency with the authority to administer and implement redevelopment in the Proposed Southwest Project Area. Although the city will administer redevelopment within the County area as well as within the City, this action does not result in the annexation of any County area to the City or the implementation of City zoning or other building standards within the County area.

One of the conditions of the County authorization of the redevelopment of the County Area by the Agency is the preparation and approval by the County, City and Agency of a Memorandum of Understanding (MOU) governing the implementation of the redevelopment of the Project Area, and the general terms and conditions of the delegation to the Agency of the County's redevelopment authority over the county area.

3. The Santa Rosa Naval Air Auxiliary Station (SRNAAS) was built by the Federal Government during World War II as a military base to train pilots. The base was deactivated in the 1950's. Operations as a private airport ceased in 1992. Today, much of the site continues to be owned by the Santa Rosa Airport Associates.
4. Keyser Marston Associates, Inc., *Preliminary Report for the Proposed Southwest Redevelopment Project*, prepared for the Santa Rosa Redevelopment Agency, January 2000, pp. 6 and 7, and Map 4, Urbanization.
5. Keyser Marston Associates, Inc. *op. cit.*
6. Southwest Santa Rosa Master Environmental Assessment, LSA Associates, Inc., April 1991, page 77.

SOCIAL/CULTURAL ISSUES

3.1.1 PLANNING AND RELATIONSHIP TO PLANS

City of Santa Rosa General Plan

All incorporated cities and counties in California are required to develop, implement and periodically revise a plan for the comprehensive regulation of land use within territory that pertains to their planning activities. The 2020 City of Santa Rosa General Plan fulfills this requirement. The General Plan has been termed the constitution of community land use; it is the highest expression of desired community character. In California, all other land use policies and permits must ultimately conform with the goals and policies of the General Plan.

Redevelopment Plan, City of Santa Rosa Southwest Area Plan, Sonoma County General Plan

The Redevelopment Plan must be consistent with the relevant goals, objectives and policies of the Santa Rosa General Plan and Sonoma County General Plan. Because the Southwest Area Plan was developed using the Santa Rosa General Plan as a guide, such assumptions as the number of dwelling units, percentages of single and multiple family dwellings, and the time frame of the Area Plan are the same as those for the General Plan. In addition, the primary purpose of the Area Plan is to implement the City's General Plan, recognizing the unique characteristics of the Southwest Area, and it is therefore a more detailed complement to the City General Plan. As the Santa Rosa General Plan was used as a guide, many of the goals, objectives and policies of the Southwest Area Plan may appear somewhat similar. Where this occurs, the Southwest Area Plan's specificity is to be followed. If the Southwest Area Plan does not speak to an issue, the direction of the General Plan is to be followed. Therefore, the Southwest Area Plan is more site-specific than the City's General Plan with respect to development in the Southwest Area.

~~Because Sonoma County is a Responsible Agency with respect to the Redevelopment Plan project, the Redevelopment Plan must also be consistent with the relevant goals, objectives and policies of the Sonoma County General Plan.~~

~~Because there is territory within the jurisdiction of the County included in the Redevelopment Plan, those portions of the Redevelopment Project Area located within the County territory must be consistent with the County General Plan.~~

This portion of the SEIR documents the proposed Redevelopment Plan's conformance with the goals, objectives and policies of the Southwest Area Plan and Sonoma County General Plan. Goal, objective and policy issues include those relating to community land use, efficient circulation and transportation, natural resource conservation, affordable housing, historic preservation, community design, public safety, the construction of infrastructure (sewer, water, drainage, roadways) to support development in the Southwest Plan Area, implementation of the Southwest Area Plan, and other issues as enumerated below.

The goal and policy provisions presented in this analysis are direct quotations from the Southwest Area Plan and Sonoma County General Plan. If Plan inconsistency or potential Plan inconsistency issues are identified, mitigation measures are noted as required to bring the proposed Redevelopment Plan project into consistency with the Area Plan and/or Sonoma County General Plan goal, objective or policy being considered. The mitigation measures are as developed in each of the technical EIR sections (i.e., *Utilities*, *Biological Resources*), following this section of the EIR.

The following is a project consistency analysis on a point-by-point basis with respect to the provisions of the Southwest Area Plan (Table 2-1 A) and Sonoma County General Plan (Table 2-1 B). A matrix format is used to make the consistency analysis easy to read and the conclusions accessible to the public and decision makers.

Table 2-1 A

**Consistency Analysis of Redevelopment Plan Project
With the Relevant Provisions of the Southwest Area Plan**

 Goals, Objectives and Policies	 Consistency Analysis
Land Use	
Goal LU-1: Establish rational patterns of population densities, transportation and services. Objective 1.1: Encourage the establishment of neighborhoods as the basic building block of southwest Santa Rosa.	Consistent: The Redevelopment Plan would provide financing assistance for infrastructure and other programs that remove blight and further development within the Plan Area consistent with the provisions of the adopted Southwest Area Plan.
Policy 1.1.4: Assure that smaller individual projects do not isolate themselves from the rest of the neighborhood. Insure appropriate pedestrian and vehicular linkages are preserved and coordinated with surrounding development, both existing and expected.	Consistent: The Redevelopment Plan provides financing for roadway and circulation improvements. The Plan is intended to remove impediments to development so that development may proceed in accordance with the policies of the Area Plan.
Circulation and Transportation	
Goal CT-4: Minimize traffic impacts to residential neighborhoods and provide adequate circulation for business and industry needs.	Consistent: The Redevelopment Plan provides financing for roadway and circulation improvements.
Objective 4.1: Support the timely construction of major roads and circulation improvements (backbone circulation improvements) which minimize impacts to residential neighborhoods and improve vehicular traffic flows to commercial and industrial businesses.	Consistent: The Redevelopment Plan provides financing for roadway and circulation improvements, inclusive of backbone roadway projects.

 Goals, Objectives and Policies	 Consistency Analysis
Policy 4.1.1: Coordinate circulation improvements with anticipated development to assure both short and long term impacts to local neighborhood streets are minimized.	Consistent: Redevelopment roadway and circulation projects would be ranked to match Southwest Plan Area development priorities and project scheduling.
Policy 4.1.2: Develop and maintain the integrity of major circulation routes by minimizing and/or combining access points, and the number of intersections.	Consistent: The Redevelopment Plan provides financing for roadway and circulation improvements. City Design Review of projects would include the evaluation of access points and intersections.
Policy 4.1.3: Work with local, State and Federal organizations and agencies to facilitate construction of these improvements in conjunction with the needs of the community, City and region.	Consistent: City and Redevelopment Agency officials would coordinate with Caltrans regarding planned improvements to U.S. 101 and Highway 12/interchanges.
Objective 4.2: Require local and minor neighborhood streets to interconnect with one another to provide multiple routes for local traffic.	Consistent: The Redevelopment Plan provides financing for roadway and circulation improvements. City Design Review of projects would include the evaluation of access points and intersections.
Policy 4.2.2: Minimize use of cul-de-sacs and dead-end streets to distribute the traffic burden throughout the neighborhood rather than concentrating it in just a few locations.	Consistent: The Redevelopment Plan provides financing for roadway and circulation improvements. City Design Review of projects would include the evaluation of access points and intersections.
 Natural Resource Conservation	
Goal NRC-2: Conserve wetland areas. Objective 2.1: Achieve no-net-loss of wetland acreage within the greater Santa Rosa Plain area.	Consistent: Redevelopment Plan Mitigation Measure 3.2.3-3 provides methods to protect, replace or restore wetlands within the Plan Area.

 Goals, Objectives and Policies	 Consistency Analysis
Goal NRC-4: Enhance the natural environment.	Consistent: Redevelopment Plan Mitigation Measures 3.2.3-1 through 3.2.3-7 provide methods to avoid impacts to natural resources in the Plan Area.
Objective 4.1: Incorporate native plants into the approval of landscape plans for new development, particularly in areas which are on the fringes of open space areas, along creeks and along the Ultimate Urban Boundary.	Consistent: Redevelopment Plan Mitigation Measure 3.2.3-5 emphasizes the use of native plant species to minimize the expansion of exotic plants or animals into wetlands and other areas adjacent to proposed development.
Policy 4.1.1: Require that the landscape plans for development projects include native plant materials which are well suited to the area.	Consistent: Redevelopment Plan Mitigation Measure 3.2.3-5 emphasizes the use of native plant species to minimize the expansion of exotic plants or animals into wetlands and other areas adjacent to proposed development.
 Housing	
Goal H-2: Encourage affordable housing unit construction.	Consistent: The Redevelopment Plan Housing Program is intended to assist in the creation, preservation and expansion of low and moderate income housing in the redevelopment project areas.

 Goals, Objectives and Policies	 Consistency Analysis
Objective 2.1: Minimize land costs associated with development of affordable housing.	Consistent: The Redevelopment Plan Development Assistance Program would assist with land acquisition and site preparation (see also discussion under Goal H-2 above). In addition, redevelopment would promote housing development within other land use categories such as retail business and service, business park, and office uses which would absorb land costs. Residences could be sold as more affordable units.
● Historic Preservation	
Goal HP-1: Preserve southwest Santa Rosa's historic, architectural and cultural heritage. Objective 1.1: Encourage and assist private property owners in preserving historic and cultural resources.	Consistent: Redevelopment Plan Mitigation Measure 3.1.7-3 provides for the protection and/or recording of historic structures in the Plan Area.
Policy 1.1.1: Utilize the expertise and knowledge of the members of the City's Cultural Heritage Board in assisting property owners to preserve and maintain privately held resources.	Consistent: Consistent: Redevelopment Plan Mitigation Measure 3.1.7-3 provides for the protection and/or recording of historic structures in the Plan Area.
Policy 1.1.2: Determine if there is interest in designating resources through educational outreach. Work with interested parties in formally designating resources for long term preservation.	Consistent: Redevelopment Plan Mitigation Measure 3.1.7-3 provides for the evaluation, protection and/or recording of historic structures in the Plan Area.
● Community Design	

 Goals, Objectives and Policies	 Consistency Analysis
Goal CD-2: Provide for an appropriate transition from the countryside to the City. Objective 2.1: Develop appropriate entries or gateways to the City in the locations identified on the Community Design Map.	Partially consistent: Buildout within the Southwest Plan Area, as assisted through the Redevelopment Plan, would visually contrast with the rural lands to the south and west. However, the Redevelopment Plan would promote City centered growth, thus preserving undeveloped lands outside the Plan Area. Thus the Redevelopment Plan would not be inconsistent with the purpose and intent of the adopted Southwest Area Plan. The financing of roadway and circulation projects would assist in developing entries or gateways as assisted through the City's Design Review procedures.
Policy 2.1.1: Utilize landscape materials, low walls and special lighting to announce entry to the City.	Consistent: The financing of roadway and circulation projects under the Redevelopment Plan would assist in developing entries or gateways as assisted through the City's Design Review procedures. The Redevelopment Plan Public Projects Program includes provisions for roadway median strip and shoulder landscaping, and the installation of signs and area lighting in the list of road and circulation projects.
Policy 2.1.2: Include a landscaped median and a double row of street trees along Stony Point Road from Ludwig Avenue to Northpoint Parkway as part of the southern entry statement. Where residential uses occur along the roadway, utilize a heavily planted berm to minimize height and visibility of the soundwall.	Consistent: Policy 2.1.2 would be required through Design Review as the Redevelopment Plan Public Projects Program is implemented.

 Goals, Objectives and Policies	 Consistency Analysis
Goal CD-4: Improve, and where appropriate, maintain the visual appearance of the existing community. Objective 4.1: Enhance the visual appearance of the eastern portion of Sebastopol Road.	Consistent: Mitigation Measures 3.1.6-1 through 3.1.6-4 provide for enhancing visual appearances in the Southwest Plan Area. The Redevelopment Plan Development Assistance Program would assist in the removal of visually deteriorated and unsafe structures, thus enhancing visual appearances (see also the discussion under Policy 2.1.1 above).
Policy 4.1.1: Encourage, and where possible assist, the County in completing the public improvements along Sebastopol Road east of Stony Point Road.	Consistent: Although Redevelopment Subarea A does not include Sebastopol Road, Redevelopment financing for roadways would include Sebastopol Road East (Stony Point Road to Olive Street).
Policy 4.1.2: continue the use of the Sycamore tree along Sebastopol Road. Where feasible, incorporate native shrub/s and accent trees within the streetscape and “front yard” landscaping.	Consistent: Redevelopment financing for Sebastopol Road is included in the Public Projects Program (see Policy 4.1.1 above; see also the discussions under Policy 2.1.2, Goal CD-4 and Objective 4.1 above).
Goal CD-5: Insure that new development helps define a sense of place. Objective 5.2: Encourage special lighting treatments to establish a sense of place and create diversity in the environment.	Consistent: Refer to the discussion under Objective 2.1 and Policy 2.1.1 above.
Policy 5.2.1: Encourage use of special lighting treatments to create areas of special interest in such places as: a) City entries; b) community and neighborhood commons; and c) on privately maintained streets or developments.	Consistent: Refer to the discussion under Objective 2.1 and Policy 2.1.1 above.
● Safety	

 Goals, Objectives and Policies	 Consistency Analysis
Goal S-1: Minimize health dangers from contaminated or potentially contaminated groundwater.	Consistent: The Redevelopment Plan Development Assistance Program provides for hazardous materials site remediation and the removal of hazardous wastes.
Objective 1.1: Minimize the potential for human health risks associated with the use of groundwater for potable sources.	Consistent: The Redevelopment Plan Development Assistance Program provides for hazardous materials site remediation and the removal of hazardous wastes.
Policy 1.1.1: Potable water for all future development in the study area shall be supplied by the municipal water system.	Consistent: The Redevelopment Plan Development Assistance Program and Public Projects Program provides for utility installation and water supply improvements.
Policy 1.1.2: Encourage existing uses to connect to the municipal water system to avoid potential human health risks.	Consistent: The Redevelopment Plan Development Assistance Program and Public Projects Program provides for utility installation and water supply improvements.
Objective 1.2: Prevent the spread of groundwater contamination.	Consistent: The Redevelopment Plan Development Assistance Program provides for hazardous materials site remediation and the removal of hazardous wastes.
Goal S-2: Eliminate existing hazardous sites and prevent new hazardous sites from forming. Objective 2.1: Identify and remediate existing hazardous sites.	Consistent: The Redevelopment Plan Development Assistance Program provides for hazardous materials site remediation and the removal of hazardous wastes.
Policy 2.1.3: Restrict development on sites with documented hazardous materials, where such materials present a health risk, until such time as a remediation plan has been approved by regulatory agencies and funding for the remediation effort is assured.	Consistent: The Redevelopment Plan Development Assistance Program provides for hazardous materials site remediation and the removal of hazardous wastes.

 Goals, Objectives and Policies	 Consistency Analysis
Goal S-3: Minimize flooding and poor drainage. Objective 3.1: Install drainage improvements as needed in coordination with new development and as a retrofit to existing developed areas.	Consistent: The Redevelopment Plan Public Projects Program provides for various storm drainage construction projects.
Policy 3.1.3: Insure adequate improvements are in place to convey storm water runoff from new development.	Consistent: The Redevelopment Plan Public Projects Program provides for various storm drainage construction projects.
● Backbone Infrastructure	
Goal BI-1: Provide the infrastructure improvements necessary to support development of the study area.	Consistent: The Redevelopment Plan Public Projects program provides for assistance to infrastructure improvements in the Southwest Plan Area inclusive of road and circulation projects, water system projects, storm drainage projects and sanitary sewer projects to serve development in the Southwest Plan Area.
Objective 1.1: Implement the backbone infrastructure phasing and financing plans to insure that adequate infrastructure is in place to serve development proposed by the Area Plan.	Consistent: Redevelopment Plan infrastructure projects would be ranked to match Southwest Plan Area development priorities and project scheduling.
Policy 1.1.1: Implement the Financing Plan called for in the Implementation Program.	Consistent: Redevelopment Plan financing would be factored into the Financing Plan as envisioned in the Southwest Area Plan.
Policy 1.1.3: Periodically, evaluate the Conceptual Phasing Plan based upon existing conditions and approved developments.	Consistent: Redevelopment Plan infrastructure projects would be ranked to match Southwest Plan Area development priorities and project scheduling. This would include evaluation of the Southwest Area Plan Conceptual Phasing Plan.

 Goals, Objectives and Policies	 Consistency Analysis
Policy 1.1.6: Upgrade existing sanitary sewer collection systems as needed to prevent groundwater infiltration--.	Consistent: The Redevelopment Plan Public Projects program provides for assistance to infrastructure improvements in the Southwest Plan Area inclusive of sanitary sewer projects.
Goal BI-2: Coordinate construction of infrastructure improvements. Objective 1.2: Minimize disruptions to neighborhoods and the community and reduce overall costs by coordinating construction of infrastructure projects with the various local, State and Federal agencies involved.	Consistent: Redevelopment Plan infrastructure projects would be ranked to match Southwest Plan Area development priorities and project scheduling. City and Redevelopment Agency officials would coordinate with Caltrans regarding planned improvements to U.S. 101 and Highway 12/interchanges, and the Sonoma County Water Agency regarding water system improvements..
Goal BI-5: Insure that a project's local infrastructure impacts are mitigated. Objective 5.1: Determine local impacts caused by individual development project and insure that appropriate measures are included in the project to address these impacts.	Consistent: A Subsequent EIR has been prepared for the Southwest Santa Rosa Redevelopment Plan project. Impacts and mitigation measures have been addressed for the Redevelopment Plan project.
 Implementation	
Goal IMP-6: Establish financing mechanisms appropriate to implement the Area Plan.	Consistent: Redevelopment Plan financing would be factored into the Financing Plan as envisioned in the Southwest Area Plan.

Table 2-1B

**Consistency Analysis of Redevelopment Plan Project
With the Relevant Provisions of the Sonoma County General Plan**

 Goals, Objectives and Policies	 Consistency Analysis
 Land Use Element	
Objective LU-1.2: Encourage the major share of commercial and industrial growth in the cities but permit a limited amount of this growth in unincorporated communities with urban services.	Consistent: Redevelopment Subareas A and B are located within the City of Santa Rosa Urban Boundary.
Objective LU-1.3: Designate lands within the various land use categories to make available residential and employment opportunities and to achieve a balance between job opportunities and population growth countywide ---- .	Consistent: The Southwest Area Plan as assisted through the Redevelopment Plan calls for concentrating housing and job opportunities within the Urban Boundary, thus preserving undeveloped lands of agricultural and/or biological value outside the urban boundary.
Objective LU-2.4: Coordinate with cities to maximize cooperative planning and implementation of the general plan.	Consistent: The County of Sonoma and City of Santa Rosa have agreed to work cooperatively in the redevelopment project to bring about a comprehensive redevelopment planning effort for the Southwest Plan Area.

Objective LU-4.1: Assure that development occurs only where physical public services and infrastructure, including school and park facilities, public safety, access and response times, water and wastewater management systems, drainage, and roads, are planned to be available in time to serve the projected development.	Consistent: Redevelopment Subareas A and B are located within the City of Santa Rosa Urban Boundary where utilities and public services are planned consistent with the provisions of the City of Santa Rosa Southwest Area Plan. The Redevelopment Plan programs are intended to be flexible and provide the capability to respond to changes and private sector interests in the Redevelopment Project Area. Redevelopment infrastructure projects would be ranked to match Southwest Plan Area development priorities and project scheduling.
LU-14a: Require full urban improvement standards and services for discretionary commercial, industrial and urban residential projects within the urban service boundary.	Consistent: Redevelopment Subareas A and B are located within the City of Santa Rosa Urban Boundary where utilities and public services are planned consistent with the provisions of the City of Santa Rosa Southwest Area Plan. The Redevelopment Plan provides financing for infrastructure projects including roadway and circulation improvements, and water system, storm drain and sewer projects under the Public Projects Program.
● Housing Element	
Goal HE-2a: Encourage the construction of a supply of affordable housing adequate to accommodate projected household growth; the majority of which is located within urban service areas ---- .	Consistent: Redevelopment Subareas A and B are located within the City of Santa Rosa Urban Boundary. The Redevelopment Plan under the Housing Program provides assistance to build, improve and preserve low and moderate income housing.

Goal HE-2b: Encourage production of new housing which will have prices or rents which are affordable to very-low, low- and moderate-income households.	Consistent: The Redevelopment Plan under the Housing Program provides assistance to build, improve and preserve low and moderate income housing.
Objective HE-2.3: Locate the majority of new affordable units in unincorporated areas within urban service areas where water and sewer services are available.	Consistent: Redevelopment Subareas A and B are located within the City of Santa Rosa Urban Boundary where utilities and public services are planned consistent with the provisions of the City of Santa Rosa Southwest Area Plan.
Objective HE-3.3: Concentrate the major share of housing assistance and public improvement activities (including financial assistance for residential rehabilitation) in a limited number of neighborhoods in order to achieve a maximum impact from expenditures. These "target neighborhoods" – are: --- Roseland, Wright --- .	Consistent: Major portions of the Roseland neighborhood are located in Redevelopment Subarea A while major portions of the Wright neighborhood are located in Redevelopment Subarea B.
• Open Space Element	
Goal OS-4: Identify critical habitat areas and assure that the quality of these natural resources is maintained and not adversely affected by development activities.	Consistent: Redevelopment Plan Mitigation Measures 3.2.3-1 through 3.2.3-8 provide methods to avoid impacts to natural resources in the Southwest Plan Area.
• Resource Conservation Element	
Policy RC-43b: Require groundwater monitoring programs for all large scale commercial and industrial uses using wells.	Consistent: Redevelopment Plan Mitigation Measure 3.2.2-2 calls for the protection of groundwater resources. The Redevelopment Plan calls for the phasing out of wells and providing connections to the City's water supply system.

Policy RC-3c: Continue to encourage research on and monitoring of local groundwater, watersheds, streams, and aquifer recharge areas in order to determine their water supply value.	Consistent: Redevelopment Plan Mitigation Measure 3.2.2-2 calls for the protection of groundwater resources. The Redevelopment Plan calls for the phasing out of wells and providing connections to the City's water supply system. The cleanup of hazardous waste sites that adversely affect groundwater would continue under the Redevelopment Plan.
Goal RC-5: Promote and maintain the County's diverse plant and animal communities and protect biotic resources from development activities.	Consistent: Redevelopment Plan Mitigation Measures 3.2.3-1 through 3.2.3-8 provide methods to avoid impacts to natural resources in the Southwest Plan Area.
Objective RC-5.1: Identify and encourage protection of areas with important wildlife habitats and woodland resources.	Consistent: Redevelopment Plan Mitigation Measures 3.2.3-1 through 3.2.3-8 provide methods to avoid impacts to natural resources in the Southwest Plan Area.
Policy RC-5b: On discretionary projects, use native or compatible non-native species to the extent possible for landscaping. Discourage use of exotics, such as pampas grass and scotch broom.	Consistent: Redevelopment Plan Mitigation Measure 3.2.3-5 emphasizes the use of native plant species to minimize the expansion of exotic plants or animals into wetlands and other areas adjacent to proposed development.
Policy RC-5c: Make the preservation of significant native oaks and other native trees a primary consideration in the review of development projects.	Consistent: Redevelopment Plan Mitigation Measures 3.2.3-1a and 1b provide methods to avoid impacts to valley oaks in the Southwest Plan Area, inclusive of Redevelopment Subareas A and B.
Goal RC-6: Identify and protect rare and endangered species and their environment.	Consistent: Redevelopment Plan Mitigation Measure 3.2.3-3 provides methods to protect, replace or restore wetlands within the Plan Area.

Objective RC-6.2: Require that any development on lands containing rare and endangered species be done in a manner which protects the resource or mitigates adverse impacts.	Consistent: Redevelopment Plan Mitigation Measure 3.2.3-3 provides methods to protect, replace or restore wetlands within the Plan Area.
• Public Safety Element	
Goal PS-1: Prevent unnecessary exposure of people and property to risks of damage or injury from earthquakes, landslides and other geologic hazards.	Consistent: Redevelopment Plan Mitigation Measures 3.2.1-1 and 3.2.1-2 provide for protection from earthquake hazards.
Objective PS-1.2: Regulate new development to reduce the risks of damage and injury from known geologic hazards to acceptable levels.	Consistent: Redevelopment Plan Mitigation Measures 3.2.1-1 through 3.2.1-3 provide for protection from earthquake and related geologic/soil hazards.
• Circulation and Transit Element	
Objective CT-1.4: Encourage increased ridership on public transit systems and increased use of alternative modes, including bicycles and walking.	Consistent: The Redevelopment Plan Public Projects Program calls for redevelopment assistance in providing separate bikeways and sidewalks for pedestrians.
Policy CT-2o: Consider new interchanges or overpasses at the following intersections with Highway 101: — Bellevue Avenue, ---- . Provide substantial improvements at the following interchanges: – Hearn Avenue, ---- .	Consistent: The Redevelopment Plan Public Projects Program calls for improvements to the Highway 101/Bellevue Avenue and Highway 101/Hearn Avenue interchanges.

3.1.2 LAND USE

SETTING

Existing Land Uses

Redevelopment Subareas A and B fall within the Southwest Plan Area (see Section 2, *Project Description* for further information regarding the Southwest Plan Area and Redevelopment Subareas A and B). The Southwest Plan Area (see Figure 2-2, Site Location Map), encompasses about 3,800 acres and is generally characterized by a mix of urban and suburban, to semi-rural land uses. Urban and suburban land uses predominate in the northern and eastern portions of the Southwest Plan Area while more semi-rural land uses predominate in the south and west portions of the Southwest Plan Area. Some of the land within the Southwest Plan Area is within the Santa Rosa City Limits, other land has been proposed for annexation. The Southwest Plan Area is within the City of Santa Rosa Urban Boundary.

Land in the east portion of the Southwest Plan Area includes 1,084 acre Redevelopment Subarea A. Subarea A north of Hearn Avenue (most of which is referred to as the Roseland Area), is generally urban or suburban. Land of Subarea A south of Hearn Avenue is largely undeveloped and is mostly semi-rural with occasional residences and outbuildings.

Land in the west portion of the Southwest Plan Area includes 930 acre Redevelopment Subarea B, which extends west of the Southwest Area Plan boundary to Merced Avenue (see Figure 2-2). Subarea B is substantially less intensively developed than Subarea A and contains the airstrip and buildings of the Santa Rosa Air Center, a surplussed World War II Navy air installation that was used for pilot training. Subarea B may be generally characterized as semi-rural with occasional residences and outbuildings. Land uses between Redevelopment Subareas A and B include scattered residences and commercial development along Sebastopol Road, with some development of light industrial, warehouse and office space closer to the Air Center in Subarea B. While the area west of South Wright Road extending to Merced Avenue was not included in the Southwest Area Plan EIR, this area is taken into consideration in this SEIR.

Land uses surrounding the Southwest Plan Area include agricultural and rural residential uses to the south, southwest and west. Highway 12 bounds the Southwest Plan Area to the north and is

the primary east-west access road to and from the City of Santa Rosa. Retail and business serving uses, public and institutional and residential land uses are found north of Highway 12. Highway 101 is located immediately to the east of the Southwest Plan Area and is the major north-south access to and from the City. Downtown Santa Rosa is located east of U.S. 101, approximately one-half mile northeast of the U.S. 101/Highway 12 interchange.

Southwest Area Plan and Future Land Use

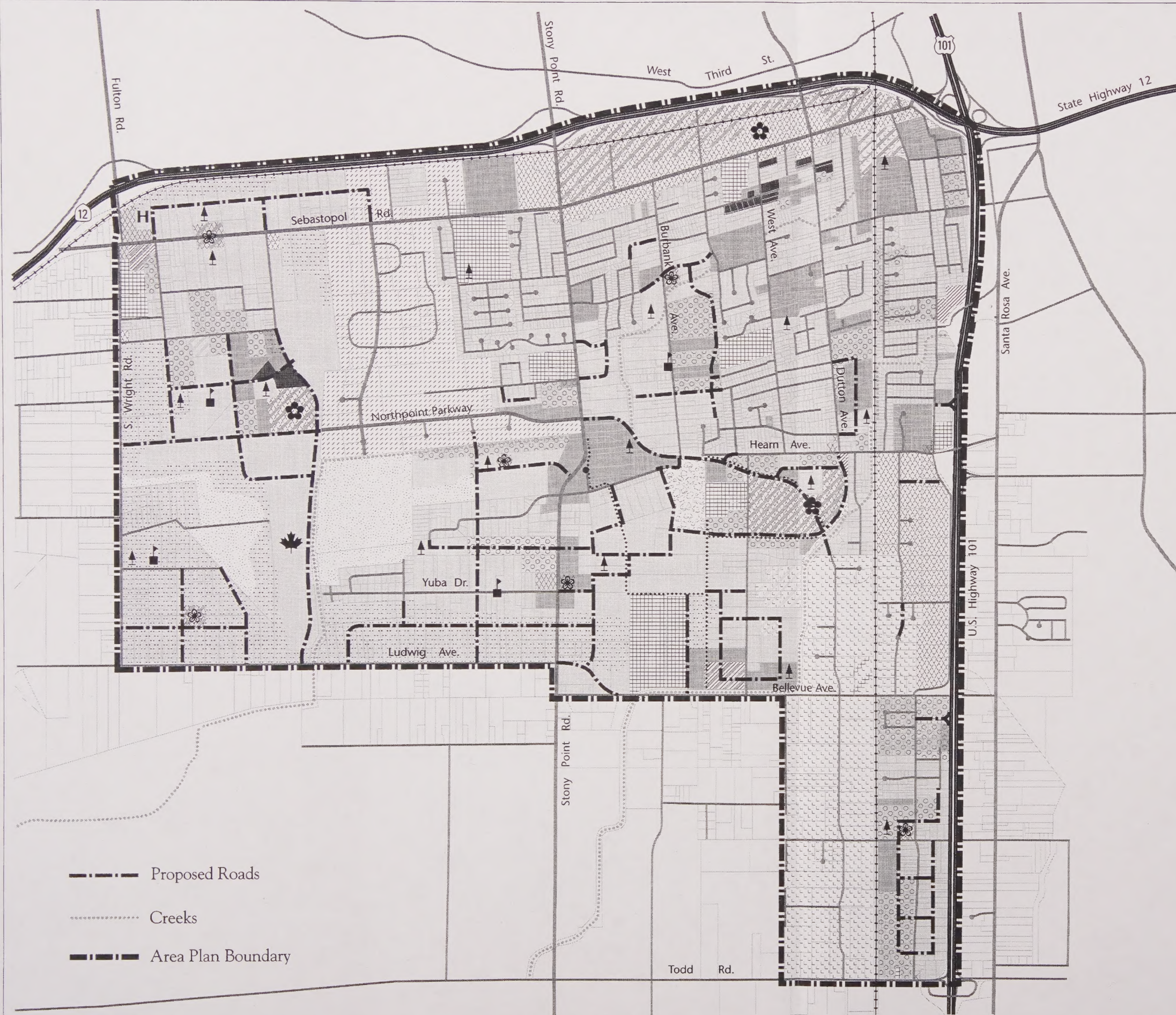
Future land uses in the Southwest Plan Area, inclusive of Redevelopment Subareas A and B, are now guided by the Southwest Area Plan. One of the primary goals of the Southwest Area Plan was to refine the City's General Plan Land Use Diagram to specifically address issues unique to the Southwest Area. The Southwest Area Plan, through the reorganization of land uses, addresses these issues including "1) supporting the formation of new neighborhoods and community centers; 2) fostering the development of mixed use projects which make the best use of available land; 3) encouraging the development of uses (such as medical services) which the southwest currently lacks; and 4) recognizing and protecting those existing land uses which contribute to the well being of the southwest area."¹ The Area Plan Land Use Diagram (Figure 3.1.2-1), designates land uses within the Southwest Area Plan boundaries and is parcel specific for residential, commercial, industrial, and established public uses. Future schools, parks and public/quasi public facilities and open space areas are generally identified. The land use classifications utilized in the Southwest Area Plan are summarized as follows:

Residential Land Uses

- Low Density/Open Space: Density of 0.025 to 8 units per acre. This assumes an average density of 4 units per acre. This classification recognizes the potential constraints associated with natural resources (wetland, rare plants and animals) as they are generally identified in the southwest planning area.
- Low Density: Two to 8 units per acre. For planning purposes, an average of 5 units per acre is assumed.
- Medium-Low Density: The Area Plan designates this density as from 8 to 13 units per acre. For planning purposes, an average of 10 units per acre is assumed. Many of the more innovative and affordable types of housing projects, such as small-lot single family subdivisions, are typically designed within the 8-13 unit per acre range. The Medium-Low classification is included in the Area Plan to allow

SOUTHWEST AREA PLAN

LAND USE DIAGRAM



- Residential - Low Density/Open Space
- Residential - Low Density
- Residential - Medium Low Density
- Residential - Medium Density
- Residential - Medium High Density
- Retail & Business Service
- Office
- Public / Institutional
- General Industry
- Business Park
- Open Space
- Park / Recreation
- Community Park
- Neighborhood Park
- Community Shopping Center/
Neighborhood Services
- Proposed School
- Homeless Shelter

Figure 3.1.2-1; Land Use Diagram



February, 1994

1500' 0 1500'

SCALE IN FEET

DEPARTMENT OF COMMUNITY DEVELOPMENT



for these types of projects, and through it, support General Plan goals for housing affordability.

- Medium Density: Eight to 18 units per acre. For planning purposes, a density of 13 units per acre is required² unless topography, parcel configuration, heritage trees, historic preservation or utility constraints make the midpoint impossible to achieve. In these cases development must achieve a minimum density of 8 units per acre.
- Medium-High Density: Eighteen to 30 units per acre. Assumed average density is 25 units per acre. Development in this density range is required³ to be 18 to 25 units per acre unless topography, parcel configuration, heritage trees, historic preservation or utility constraints make the midpoint impossible to achieve. In these cases development must achieve a minimum density of 18 units per acre.

Commercial Land Uses

- Retail Business and Service: This designation includes all types of stores and personal service establishments, including commercial strips located on a major arterial and free standing buildings. These areas are not considered shopping centers.
- Office: Offices providing professional and business services that are not minor adjuncts to retail, industrial, or residential uses.
- Business Park: A planned center for manufacturing with no nuisances (e.g. noise, visual clutter, noxious emissions, etc); distribution, and research. Offices, business park employee-oriented, low intensity commercial uses and warehousing (with no outside storage) may be permissible as stipulated in a Business Park Master Plan or Policy Statement.
- General Industrial: An area for manufacturing and distribution activities with potential for creating nuisances, along with accessory office and retailing.

Mixed Use Categories

- Community Commons: A complex of retail and service enterprises anchored by a supermarket or possibly a super drugstore, and serving a community clientele. Restaurants, theaters or other similar uses are also appropriate. A Community Commons shall be required to incorporate medium and medium-high density residential components either directly within or adjacent to the shopping area.
- Neighborhood Commons: A place for neighbors to meet, socialize, organize, shop, recreate, and educate. A Neighborhood Commons shall also incorporate medium density residential development as part of the overall design of the facility.

- Office and/or Residential: Encourages development of offices and Residential: Medium Density as a mixed use project but also permits developments of either category of land development, if found appropriate.
- General Industry/Residential: An area which has viable general industrial uses but for which a residential development may ultimately be appropriate. General Industrial uses for which an expansion is proposed must demonstrate appropriate transitions and compatibility with residentially designated lands and uses in the vicinity.

Other Categories

- Open Space: Areas with special environmental conditions or significance, that is subject to wildfire, geologic hazards or provides watershed or important wildlife or biotic habitat. Residential uses with a minimum parcel size of 40 acres are allowable within the Urban Boundary.
- Public/Institutional Facilities: An area or cluster of governmental or institutional facilities, such as hospitals, schools, utility facilities, government office centers, etc.

The Southwest Area plan provides for essentially the same types and mix of land uses called for in the General Plan. An important distinction between the General Plan and the Southwest Area Plan is the specificity of the land use designations. The Southwest Area Plan is parcel specific in its designation of land uses where the General Plan is more general in nature. An exception to the parcel specific land uses is the location of facilities such as parks and schools (see Figure 3.2.1-1). Symbolic designations were placed in areas which appeared to be the best locations based upon available information but may float within the vicinity of the designated parcel or area. Another feature of the Southwest Area Plan land use diagram is the mixed use designation which will allow more flexibility in achieving General Plan Goals while balancing the need to maintain viable existing uses which provide employment opportunities and services to the community.

Recent Development in the Southwest Plan Area

As background information, and as noted previously, 35 individual project proposals were examined in the 3,800 acre Southwest Area Plan EIR. This included the areas encompassed by Redevelopment Areas A and B as described in this SEIR. During the early stages of Southwest Area Plan preparation, the Department of Community Development solicited land development proposals from interested property owners and developers. The land use proposals served as the basis for infrastructure planning including roadway and circulation improvements. The 35

proposals accounted for about 857 of the 1,700 vacant acres within the Southwest Area. The proposals included 5,121 dwelling units, 300,000 square feet of commercial space, 43 acres of park land, 62 acres of open space, an elementary school a replacement fire station and other miscellaneous uses. The proposed development represented slightly more than half of the residential development potential and the majority of community and neighborhood retail commercial development potential in the Southwest Plan Area.

Since the Southwest Area Plan was approved by the City Council on June 21, 1994, only a small portion of the 35 individual development proposals have been completed. In addition, some of the 35 proposal have been dropped from further consideration by the proposers/land owners. In terms of infrastructure projects, Hearn Avenue from about Dutton Avenue to Stony Point Road (a distance of about one mile), has been reconstructed with a new road surface, curbs and gutters. Portions of the Hearn Avenue/U.S. 101 interchange project have also been completed and improvements have recently been completed to the Roseland Creek drainage channel by the Sonoma County Water Agency.

Fifteen project proposals were included in the area bounded by Subarea A and four projects were included in the area bounded by Subarea B. A listing of these projects and their status is as follows:⁴

Redevelopment Project Subarea A

Project No. & Description	Status
1 Dutton Place: 24 residential units, 3.4 acres.	Not constructed
2 Westmeadow Park: 36 residential units, 4.5 acres	Not constructed
3 Western Gardens: 43 residential units, 3.94 acres	Not constructed
4 Fouche Garden Village: 124-166 residential units, 2.65 acres of park, 12.2 acres	Not constructed
5 Southcreek Village: 124 residential units, 4,300 sq. ft. commercial space, 19.3 acres	Not constructed
6 Baker Subdivision: 41-46 residential units, 5.8 acres	Not constructed
7 Burbank Ave. condominiums: 40-65 residential units, 5.0 acres	Not constructed
13 Mountainview Homes: 12 residential units, 1.7 acres	Not constructed
18 Burbank Housing: 110 residential units, 6.0 acres	Project Completed

23	Young's Dutton Place: 34 residential units, 5.6 acres	Not constructed
24	Lara Subdivision: 22 residential units, 4.6 acres	Not constructed
25	Patrick Brennan Acres: 47 residential units, 8.7 acres	Less than 50% built
29B	Bellevue Ranch: (see 29 C below)	
29C	Bellevue Ranch: consists of 3 sites (portion of 29 A, B and C) 700 residential units, 170,000 sq. ft. of commercial space, 7 acres of linear park	Less than 50% built
35	Bellevue Elementary School	Project completed

Redevelopment Project Subarea B

Project No. & Description	Status
8 Ash Drive: 16 residential units, 2.4 acres	Not constructed
10 Martin Homeless Housing: 173 residential units, 30,900 sq. ft. office and warehouse space, 5.2 acres	Not constructed
22 Springfield: 417 residential units, 25,000 sq. ft. commercial space, 6 acres of open space, with a total of 75.8 acres	Application withdrawn
30 Air Center: 1,312 residential units, 78,000 - 100,000 sq. ft. commercial space, 27 acres of park, 9 acre school site, 50 acres of open space, with a total of 316.7 acres	Not constructed

In total, within Redevelopment Subareas A and B, a maximum of about 200 residential units have been constructed out of a total 2,850 proposed since the Southwest Area Plan was approved in 1994 (7%), a maximum of 10,000 sq. ft. of commercial/office space has been built out of a total 210,200 sq. ft. proposed (4.7%), and about 2.5 acres of parks and open space has been established out of 88 acres proposed (2.8%). In addition, the Bellevue Elementary School has been constructed. This does not include some 16 other proposed projects included within the Southwest Plan area outside of Redevelopment Subareas A and B. Clearly there is a significant amount of proposed project construction which has not yet been built within the Southwest Plan Area as a whole and specifically within Redevelopment Subareas A and B. This is important from a community planning standpoint because under the Southwest Area Plan and land use designations contained therein, there will be significant physical changes and increasing intensities of land use if the majority of the proposed projects as originally envisioned and as documented in the Southwest Area Plan come to fruition (this subject is discussed further in Section 3.1.6, *Visual Quality and Community Character*).

IMPACTS AND MITIGATION MEASURES

Standards of Significance

The evaluation of land use impacts normally includes identifying the impacts of changes in the type and intensity of land uses and the compatibility of those changes with existing or planned adjacent uses. A significant impact is identified when proposed changes in type or intensity of land uses are not compatible with existing or approved land uses on or adjacent to a project site. A significant impact is also identified where a project would contribute to cumulative land use changes resulting from development of a proposed project and other approved, proposed and planned projects in the vicinity which would result in substantial changes to the land use pattern in the vicinity.

With respect to incompatible land uses, of particular concern are situations which could result where sensitive land uses (i.e., schools, child care facilities, senior housing developments etc.), could be adversely affected.

For this SEIR, a project would normally have a significant adverse land use impact if it would:

- Conflict with any applicable land use plan, policy or regulation (i.e., General Plan, Area Plan, Zoning Ordinance) of the local jurisdiction, or create the potential for incompatible land uses.
- Physically divide or disrupt the configuration or physical arrangement of an established community.

For purposes of this SEIR, the evaluation of plan and policy conformance of the Redevelopment Plan project with respect to the goals, objectives and policies of the Southwest Area Plan and Sonoma County General Plan is provided in Section 3.1.1, *Planning and Relationship to Plans*. As noted previously, (refer to the Introduction section of this SEIR), impacts in this SEIR are projected to the year 2010 consistent with the buildout assumptions contained in the Southwest Area Plan.

Development Assistance Program

The Development Assistance Program basically provides redevelopment financing for land acquisition, deteriorated structure removal, site preparation, relocation assistance, hazardous

materials remediation and the removal of concrete runways at the Air Center. Redevelopment financing for these activities would not directly lead to adverse land use impacts within Redevelopment Areas A or B because the Development Assistance Program activities would not generate inconsistencies with the land use pattern as established in the Southwest Area Plan as approved by the City Council. Nor would Development Assistance Program financing physically divide or disrupt the Southwest community as envisioned in the Southwest Area Plan. Redevelopment financing under the Development Assistance Program would be expected to stimulate development and remove obstacles to development within Redevelopment Subareas A and B, and secondarily within the Southwest Plan Area as a whole, consistent with the Southwest Area Plan arrangement of land uses.

Therefore, no adverse land use impacts are identified under the Development Assistance Program.

Public Projects Program

Impact 3.1.2-1

Roadway widening, reconstruction and installation projects could disrupt portions of the physical arrangement of the established community through the additional acquisition of rights-of-way. (S)

Of principal concern under the Public Projects Program would be the need to acquire additional rights-of-way to accommodate the various roadway widening and reconstruction projects envisioned throughout the Southwest Plan area. As noted previously in Section 2, *Project Description*, all water supply pipes will be installed within existing and proposed road rights-of-way, with the exception of branch water mains required to serve individual residential or commercial facilities. In addition, local sanitary sewer service lines and collectors required to serve individual residential or commercial facilities would connect to existing trunk facilities and be located under existing and/or proposed streets, and drainage projects would be located under existing roads or within existing easements to replace or augment existing drainage facilities. Thus the principal potential land use impacts would relate to road construction and right-of-way acquisition.

Road infrastructure projects are listed in Appendix A of this SEIR. Although detailed designs have not been prepared for most of these projects, the Hearn Avenue reconstruction project can serve as an example. A portion of this project has been completed (Stony Point Road to Dutton Avenue). The approximate pre-existing 40- to 50-foot wide right-of-way was determined to need to be increased to approximately 56 feet in width along the length of Hearn Avenue to accommodate the proposed reconstruction.⁵ Portions of the residential front yards and driveways of some residences along Hearn Avenue were found necessary to be acquired by the City. Landscaping, driveways and mailboxes were found necessary to be removed and relocated and/or repaired by the City of Santa Rosa because of the project. An additional five to 17 feet of width were needed for rights-of-way, depending on location, in order to complete the project. Other portions of the project did not require any right-of-way acquisition. Overall, it was found that the acquisition of additional rights-of-way to accommodate the full 56-foot wide width of the improvement project would not limit the affected properties for their existing or intended General Plan land uses.

Implementation of the following mitigation measure would reduce this impact to an insignificant level.⁶

Mitigation Measure 3.1.2-1

Any real property acquisitions and any resulting displacement of persons necessary for the projects will be done in accordance with the eminent domain law and the applicable state or federal real property acquisition and relocation laws.

If a project undertaken as part of a redevelopment project will result in the removal of any existing low and moderate income housing, the Santa Rosa Redevelopment Agency shall replace each low and moderate income housing unit removed on a one-for-one basis within four years of its removal in accordance with the Community Redevelopment Law. (I)

Mitigates:	Impact 3.1.2-1 (I)
Implementation:	City of Santa Rosa, Department of Public Works in conjunction with Redevelopment Agency
Responsibility:	City of Santa Rosa, Department of Public Works Redevelopment Agency
Monitoring:	City of Santa Rosa, Department of Public Works Redevelopment Agency

As necessary, the City shall relocate, adjust, and/or reconstruct any existing fences, mailboxes, driveway aprons or other residential front-yard site appurtenances encountered in the area of construction.

Housing Program

Under the Housing Program, redevelopment assistance to build, improve and preserve low and moderate income housing would not directly adversely impact land uses within Redevelopment Areas A or B, or within the larger Southwest Plan Area because these activities would not generate inconsistencies with the land use pattern as established in the Southwest Area Plan as approved by the City Council. The Housing Program would be expected to stimulate development and remove obstacles to development within Redevelopment Subareas A and B, and secondarily the Southwest Plan Area as a whole, consistent with the Southwest Area Plan arrangement of land uses. Therefore, no adverse land use impacts are identified under the Housing Program.

It should be noted that the Southwest Area Plan EIR identified the loss of 848 acres of Farmlands of Local Importance, so designated by the State Department of Conservation and Sonoma County, as a significant adverse impact. This is because such lands had been determined important to the local agricultural economy by the State Department of Conservation and Sonoma county Board of Supervisors due to its productivity. At this time, since approval of the Southwest Area Plan and with the advent of new development within the Southwest Plan Area, the extent of Farmlands of Local Importance is diminishing, and those Farmlands of Local Importance remaining within the Urban Limit Line are increasingly less suitable for agricultural use because of encroaching urban development. Active crop production or other agricultural land uses within the Southwest Plan Area are notably lacking, and in the Redevelopment Area there is no active crop production or other agricultural land use. ~~particularly within Redevelopment Subareas A and B which~~ are considered 93 % urbanized as noted earlier (see Section 2, *Project Description*). Therefore, with approval of the Southwest Area Plan by the Santa Rosa City Council and issuance of a Statement of Overriding Considerations regarding this issue, and because new development would need to be in conformance with the now approved Southwest Area Plan, the loss of remaining Farmlands of Local Importance within the Southwest Plan Area is not considered a significant impact under the Redevelopment Plan project.

Notes - Land Use

1. City of Santa Rosa, Department of Community Development, *Southwest Area Plan*, approved by the Santa Rosa City Council on June 21, 1994, page 16.
2. General Plan policy H-3b sets forth this requirement.
3. General Plan policy H-3b sets forth this requirement.
4. Project status provided by City of Santa Rosa Community Development Department staff, November and December, 1999.
5. City of Santa Rosa, Department of Community Development, *Hearn Avenue Reconstruction and Improvement Project, Draft Subsequent Environmental Impact Report*, EIP Associates, May, 1995, pages 3-4 and 3-5.
6. Telephone communication with John Kunselman, City of Santa Rosa Right-of-Way Agent, December 13, 1999.

3.1.3 TRAFFIC AND CIRCULATION

SETTING

General Commute Characteristics

Although it is somewhat dated, the 1990 Census provides the most comprehensive information about characteristics of journey-to-work trips in the study area. Census tract (CT) 1531 includes the Roseland area, and is bounded by Hearn Avenue, US 101, Highway 12 and Stony Point Road. Census tract 1533 is bounded by Stony Point Road, the Laguna de Santa Rosa, and Highway 12. Some of the key commute characteristics are:

	<u>CT 1531</u>	<u>CT 1533</u>
Percentage of employed residents working in Sonoma County	91 %	91 %
Percentage of Sonoma County employed residents working in Santa Rosa	50 %	47 %
Mode shares for journey to work – Drive Alone	69 %	77 %
Carpool (2 or more)	18 %	12 %
Transit	2 %	1 %
Walk	3 %	2 %
Worked at home	7 %	7 %

Of those working outside Sonoma County, the most frequent workplace locations are first, Marin County, and then San Francisco. However, only a relatively small percentage of people work in San Francisco: two percent in CT 1531, and less than two percent in CT 1533.

Transportation Network Description and Classification

Street Classifications

Streets are classified as either freeways, expressways, arterials, or collectors (the VISION 2020 General Plan provides definitions of these facilities). US 101 and Highway 12 are classified as freeways in the vicinity of the Redevelopment Plan project. Presently, Highway 12 is a four lane freeway as far west as Stony Point Road, where the freeway ends and Highway 12 becomes a four lane divided expressway to approximately Llano Road. From Llano Road west, Highway 12 is an undivided two lane highway with access control. Streets classified as arterials in the Southwest Plan Area include South Wright Road, Stony Point Road, Dutton Avenue south of Hearn Avenue, Bellevue Avenue, Hearn Avenue east of Dutton Avenue, Todd Road, Sebastopol Road, Corporate

Center Parkway and Northpoint Parkway (see Figure 3.1.3-1).¹ Streets classified as collectors include Dutton Avenue north of Hearn Avenue, Fresno Avenue, Finley Avenue, Hearn Avenue west of Dutton Avenue, Lombardi Lane, Ludwig Avenue, Campbell Drive, Burbank Avenue, West Avenue, Dutton Meadow, South Wright Road, Corby Avenue, Moorland Avenue, and Primrose Avenue.

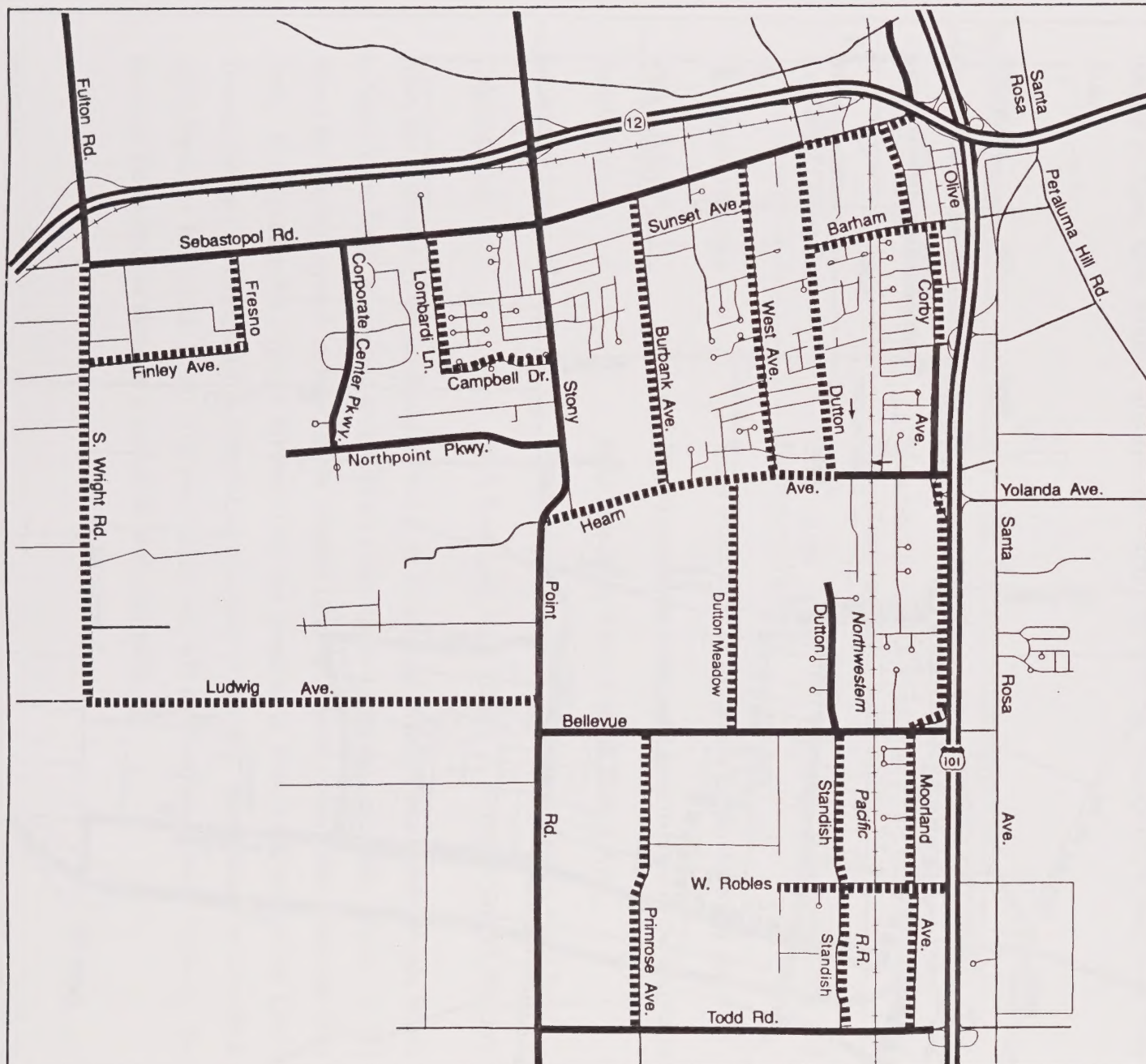
Transit Services

Santa Rosa City Bus is the primary transit provider in the Southwest Plan Area (see Figure 3.1.3-2). City Bus is operated by the Santa Rosa Department of Transit and Parking, and routes provide service within the City of Santa Rosa plus some areas immediately adjacent to the City. Most routes converge on the Second Street Transit Mall (between B Street and Santa Rosa Avenue) in downtown, where connections can be made with other City Bus routes, as well as intercity and inter-regional transit services.

The three City Bus routes serving the Southwest Plan Area include:²

- ***Route 9 - Corporate Center Parkway.***
This route serves the Corporate Center area, the Sebastopol Road commercial/retail district, and connects to the 2nd Street Transit Mall in downtown Santa Rosa. Service is provided every 30 minutes Monday through Friday, from 6:00 AM to 7:30 PM, and every 60 minutes on Saturdays and Sundays. On Saturdays, service is operated 6:30 AM to 7:30 PM, and on Sundays from 10:30 AM to 4:30 PM.
- ***Route 12 - Roseland***
This route provides a one-way clockwise loop that serves Corby Avenue (just north of auto row), Hearn Avenue, West Avenue, and Sebastopol Road. This route also serves the Southwest Community Park. Buses run every 30 minutes from approximately 6:15 AM to 7:45 PM Monday-Friday; with hourly service on Saturdays and Sundays. Saturday service is from 6:45 AM to 7:45 PM, and Sunday service is from 9:45 AM to 3:45 PM.
- ***Route 15 - Stony Point Road***
This route has been added since the Southwest Area Plan was prepared. It travels between the Westside Transfer Facility (adjacent to the Coddington Shopping Center) via West Steele Lane, south on Stony Point to a loop made just south of Hearn Avenue.

Intercity transit service within the county is provided by Sonoma County Transit. Route 22X (Route 20) also operates nearby on Highway 12. These routes connect Santa Rosa (2nd Street



SOUTHWEST PLAN AREA

Dowling Associates

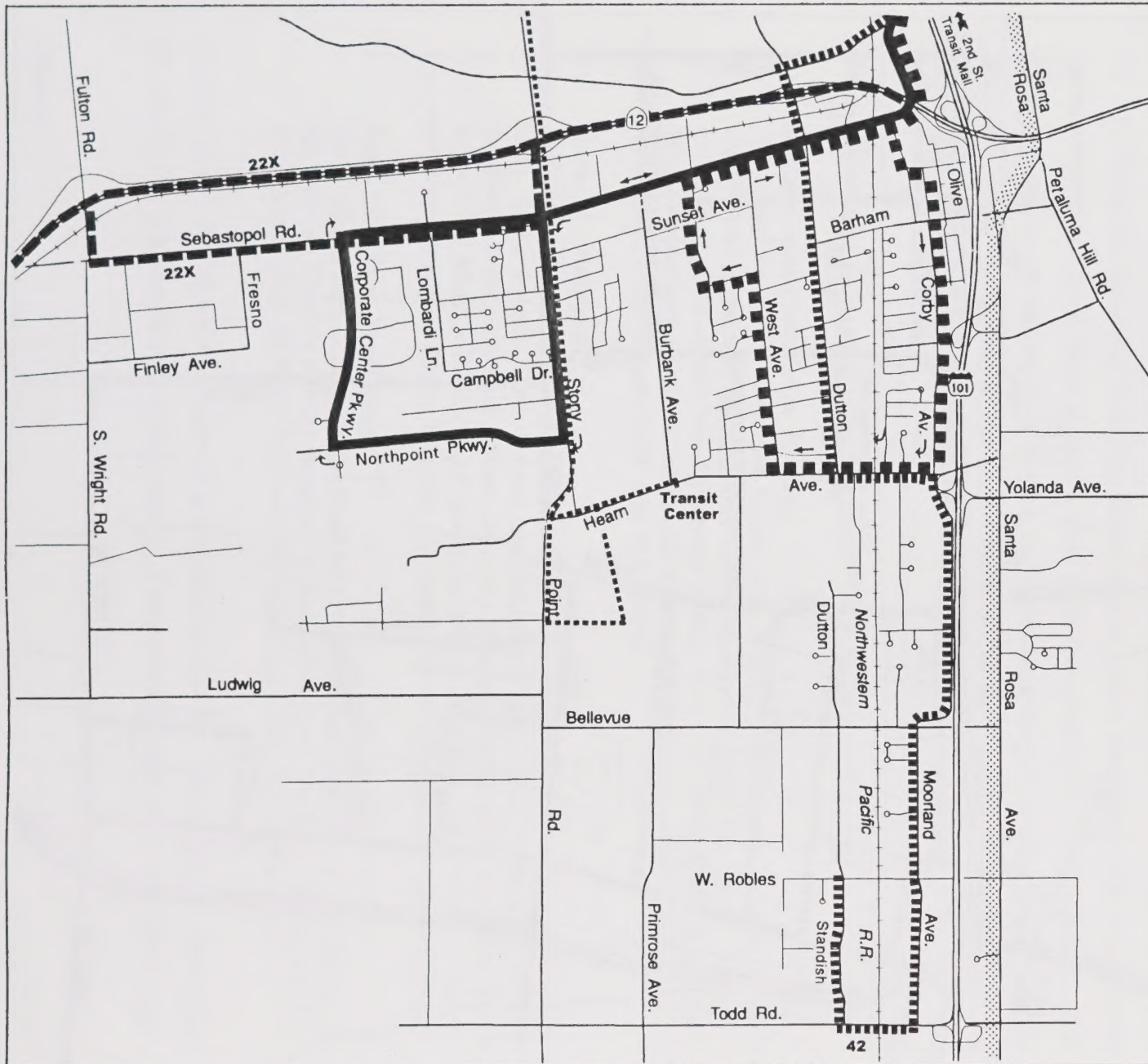
STREET DESIGNATIONS

-  Freeway
-  Arterial
-  Collector
- All Others Are Local Streets

Source: City of Santa Rosa
VISION 2020 Santa Rosa General Plan
(1996)

**Figure 3.1.3-1
EXISTING AREA STREETS
AND CLASSIFICATIONS**





SOUTHWEST PLAN AREA

Dowling Associates

CITYBUS

— 9 Corporate Center Parkway

- - - 12 Roseland

..... 15 Stony Point Road

SONOMA COUNTY TRANSIT

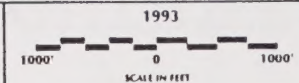
— Route 22x

- - - Route 42

..... Other Golden Gate and
Sonoma County Transit Service

**Figure 3.1.3-2
EXISTING TRANSIT SERVICE**

Source: City of Santa Rosa,
Santa Rosa 2020 General Plan,
(1996)



Transit Mall) to Sebastopol (22X) and Occidental (20). Routes operate daily, with limited service on weekends. Route 42 provides service from the 2nd Street Transit Mall along West Third Street, Dutton Avenue, Hearn Avenue, Corby Avenue, Todd Road, and Standish Avenue. Six trips per weekday are provided in each direction.

Inter-regional (i.e., inter-county) transit service is provided by Golden Gate Transit (GGT), a division of the Golden Gate Bridge, Highway, and Transportation District. The nearest routes operate on Santa Rosa Avenue, and are not within easy walking distance of the Southwest Plan Area.

Bikeways

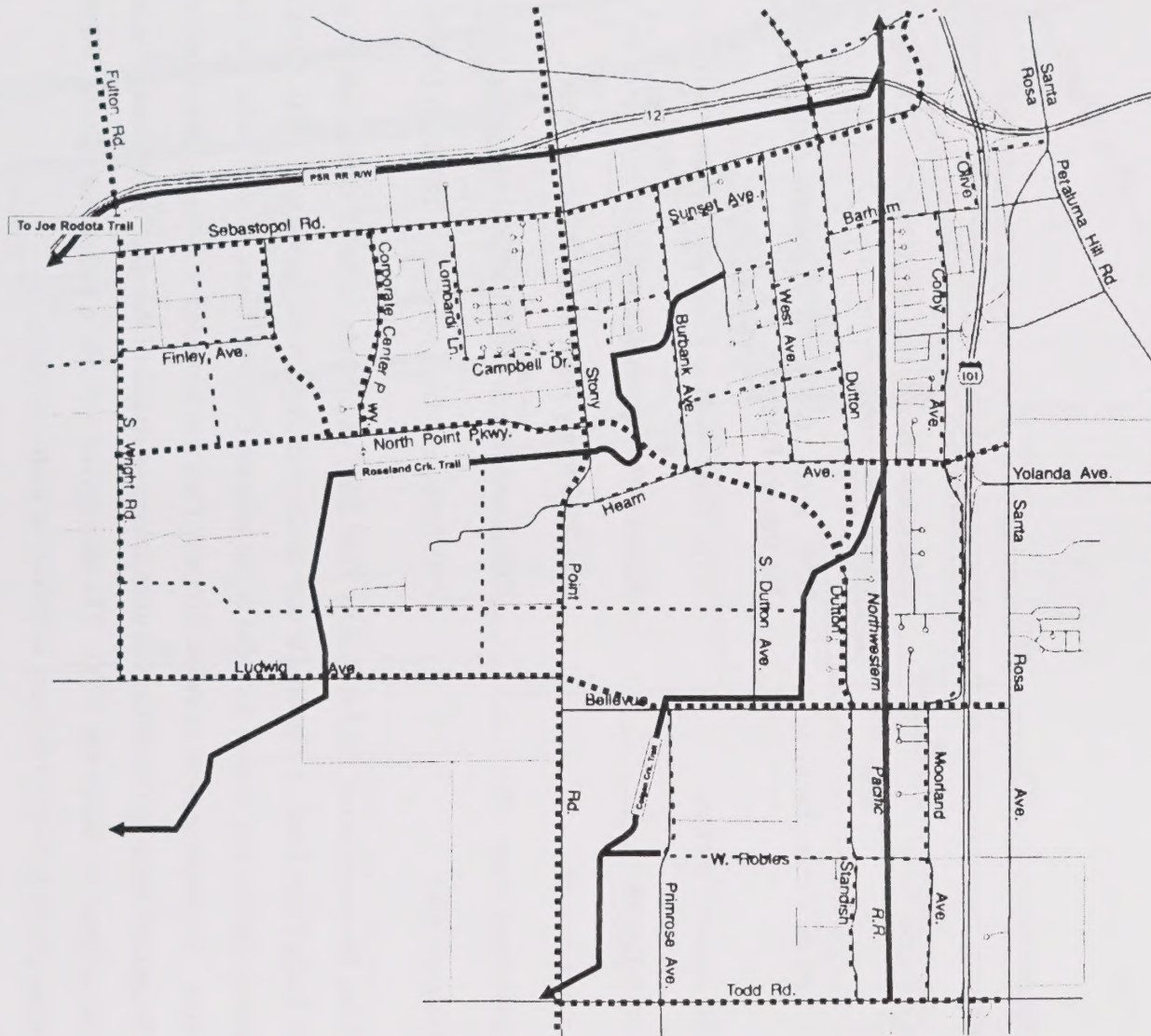
Existing bikeways in the Southwest Plan Area include:

Sebastopol Road	Bike lanes (class II) between Corporate Center Parkway and Stony Point Road.
Corporate Center Parkway	Bike lanes (class II) between Sebastopol Road and Northpoint Parkway.
Northpoint Parkway	Stony Point Road to Corporate Center Parkway (class II)
Dutton Avenue	Signed route from Sebastopol Road to north of the study area
Hearn Avenue	Bike lane Stony Point Road to Dutton Ave.
Sebastopol Road	Bike lane between Burbank Ave. and Stony Point Road
Colgan Creek	Path from near Elsie Allen H.S. to east of Dutton Meadow

Also, the extension of the Joe Rodota Trail from its existing terminus near South Wright Road, to Stony Point Road, is expected to commence construction during the year 2000. Figure 3.1.3-3 shows the bikeway system included in the adopted Citywide bikeway plan in the Southwest Plan Area. A comprehensive citywide Bikeway Plan was prepared in 1994, and currently the City's Transit and Parking Department is undertaking an update of this plan, which should be completed and adopted by November 2000. The plan update will add a pedestrian element, however, the scope of the pedestrian element is limited to multi-use paths.

SOUTHWEST PLAN AREA

BIKEWAYS PLAN



—————	BikePath-ClassI
.....	BikeLane-ClassII
- - - - -	BikeRoute-ClassIII

**Figure 3.1.3-3
BIKEWAYS PLAN**

**Source: Southwest Plan Area
June 1994
City of Santa Rosa**



Traffic Volumes and Levels of Service

Average Daily Traffic Volumes

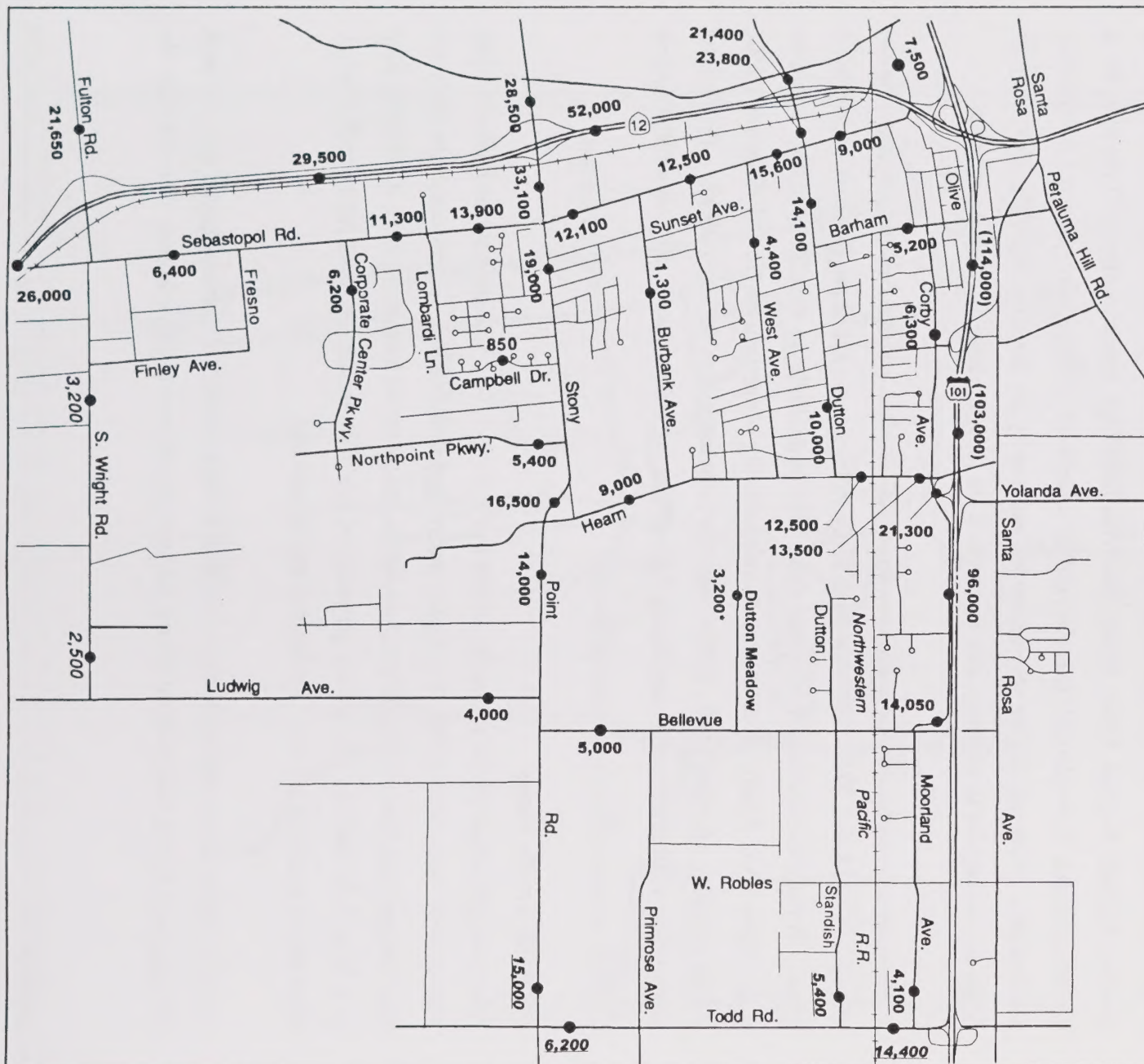
Average daily traffic (ADT) counts using machine traffic counters were obtained from the City of Santa Rosa's publication, "Current Traffic Volumes," (April 1, 1999), and Sonoma County's "Traffic Volumes" (January 1994 through December 1998) (see Figure 3.1.3-4). Counts have been rounded to the nearest hundred. The highest volumes are on US 101 and Highway 12. High volume city streets include Stony Point Road, Sebastopol Road, the eastern portion of Hearn Avenue, and Dutton Avenue north of Barham (all above 10,000). Several other streets (West Avenue, Barham Avenue, Olive Street) have relatively high traffic volumes. Typically, for a street to maintain its residential character, traffic volumes of no more than 1,000 to 3,000 per day are desirable. Although higher volumes do not necessarily tax the capacity of the street, they do create the perception to residents that the street is no longer primarily local in character.

Streets that have had substantial increases in traffic volumes include Bellevue Avenue, Dutton Meadow, Todd Road, Dutton Avenue, and Stony Point Road. All of the increases appear to be because of new development taking place since 1993 (e.g., Bellevue Ranch), road improvements (e.g., Stony Point Road), or diversions from increasing congestion on US 101 diverting traffic to other routes. In some cases, traffic volumes decreased since the early 1990s. This can be explained by road construction, day-to-day fluctuations in traffic volumes, and temporary business closures.

PM Peak Traffic Flows

Afternoon peak hour traffic flows are shown in Figure 3.1.3-5. Counts were conducted for this EIR in early November 1999. The figure shows directional counts, in contrast to the daily (24 hour) counts (identified in Figure 3.1.3-4), which are totals for both directions. A PM peak hour of 4:30 to 5:30 PM was selected for purposes of modeling the existing and future traffic flows, since this is generally the hour for highest traffic volumes.

As might be expected, traffic flows are not always balanced in both directions, nor does the peak 60 minutes of traffic always occur during the same period at every intersection. For example, the



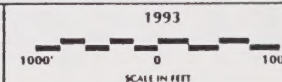
SOUTHWEST PLAN AREA

Dowling Associates

1000 City of Santa Rosa
1000 County of Sonoma
(1000) Caltrans 1998

* Dowling Associates/BayMetrics

**Figure 3.1.3-4
EXISTING WEEKDAY
TRAFFIC VOLUMES
(Most Recent Available
Counts, Usually 1997-1999)**

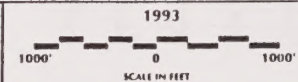
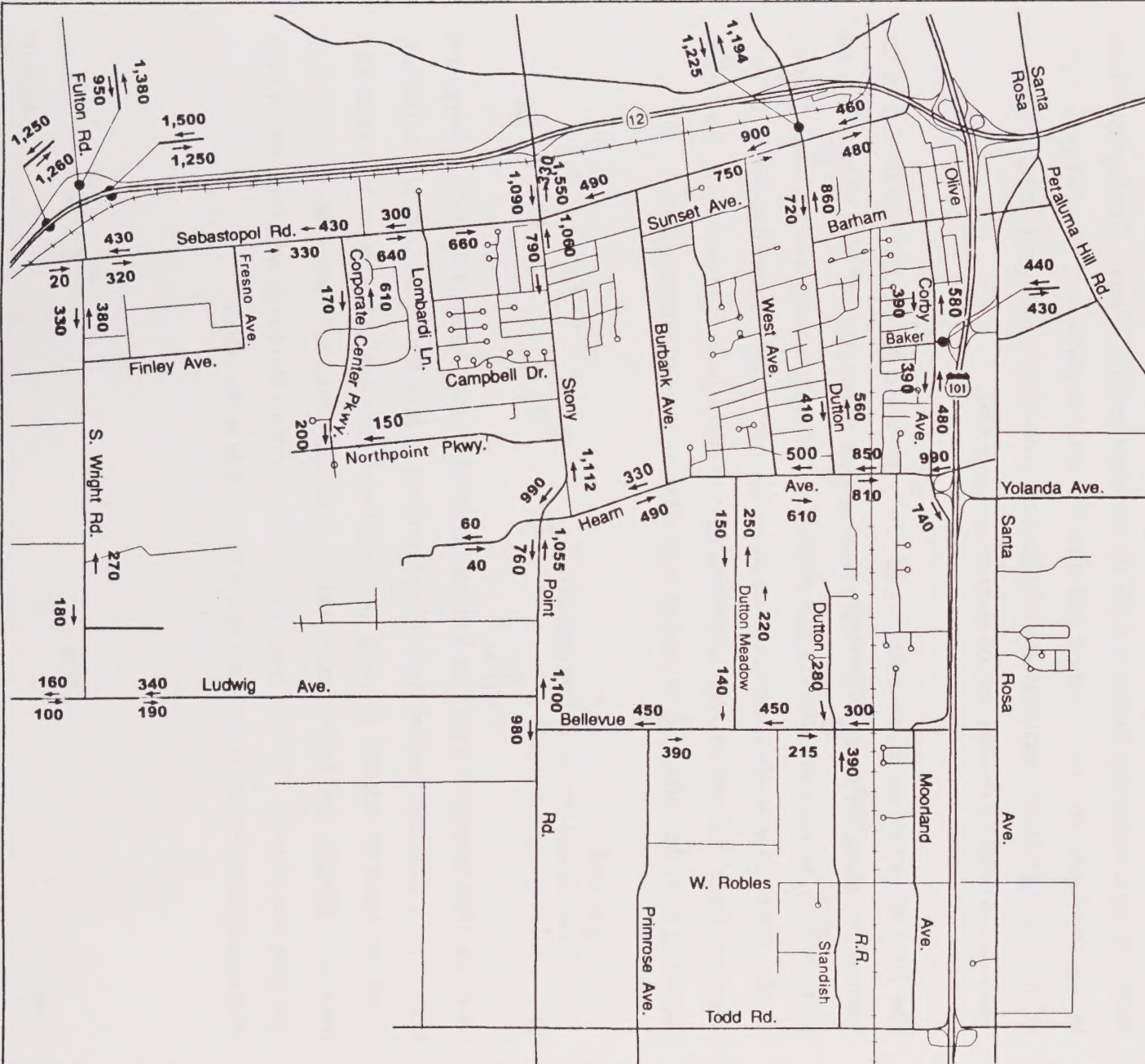


SOUTHWEST PLAN AREA

Dowling Associates

Source: Dowling Associates Counts
November 1999

**Figure 3.1.3-5
EXISTING PM PEAK
TRAFFIC FLOWS
(4:30-5:30 Weekday typically)**



heavy northbound traffic along Stony Point Road is probably there in an attempt to avoid congestion along US 101, which becomes congested between 4-6 PM. Traffic on US 101 northbound often is stop-and-go from the south Santa Rosa Avenue off-ramp through downtown Santa Rosa to approximately Steele Lane. Friday congestion often lasts longer due to recreational traffic headed for the north coastal areas of the State.

Intersection and Corridor Levels of Service

Intersection traffic counts were performed for this study in November 1999. The intersections were counted continuously from 4 to 6 PM on weekdays (except Fridays). The highest volume in any continuous 60 minute period was used for analysis purposes. The PM peak traffic volumes, along with intersection lane configuration ("geometrics") and signal timing information were used to compute the intersection level of service (LOS).

The level of service on urban streets is generally governed by the level of service of the intersections along the street. The City's General Plan adopts corridor level of service as the traffic criteria, which is in turn a function of delay at intersections along with mid-block running speeds. Intersection levels of service based on counts in this study are shown in Figure 3.1.3-6. There are three different analysis techniques used to compute level of service in this figure, depending upon the traffic control used at these different types of intersections:

- Signalized
- Unsignalized (two-way stop control)
- All-way stop control

Since the 1994 Southwest Area Plan EIR was prepared on the *Southwest Area Plan*, there have been several technical, methodological improvements in how the calculations are performed. These are based on research showing that capacity of individual traffic lanes is greater than previously thought, and better understanding of delay, particularly when the intersection is operating near capacity. The new research has also provided a way to calculate delay for all three intersection control-types in a manner that is comparable to the others.

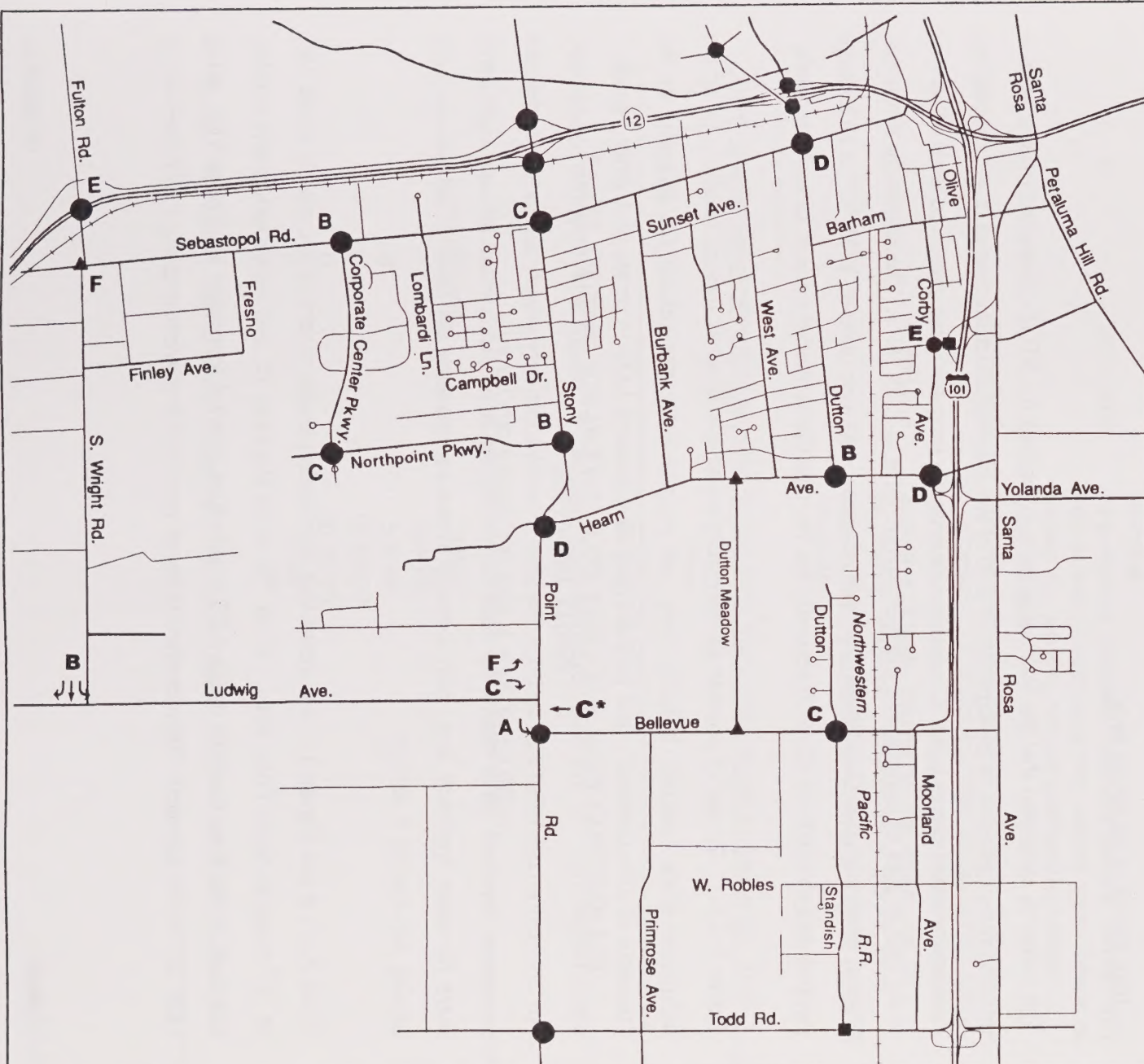
SOUTHWEST PLAN AREA

Dowling Associates

TRAFFIC CONTROL

- Traffic Signal
- 2-Way Stop
- ▲ All Way Stop
- ↶ A LOS for Specific Turning Movement
- * Single Lane Approach;
Reflects Conditions
Prior to Signal Turn-on

**Figure 3.1.3-6
EXISTING INTERSECTION
LEVELS OF SERVICE
1999 PM Peak Hour
(Study Intersections Only)**



Because this raises an issue of consistency with the earlier work, all computations shown continue to be based upon the 1985 *Highway Capacity Manual* (HCM), except for stop control intersections, where the method changed radically for the better and the newer methods (contained in the 1994 *Update of the 1985 HCM*) provide so much better information as to render the earlier method undesirable. The technical appendix to this report (on file at the Department of Community Development), provides a comparison of the level of service that is calculated from the same data, using the two different methods. In general, had the 1994 HCM method been used instead, the levels of service generally would have been better—in some cases considerably better — than shown in the tables here.

The reader is cautioned that the level of service computed for STOP-controlled intersections is not directly comparable to the same letter level of service with different control (e.g., a signalized intersection operating at LOS “C” does not necessarily have the same perceived level of service to the user as does an unsignalized intersection operating at LOS “C”). The reason for this is that level of service is measured differently. For example, with stop control, LOS “C” is an average stopped delay/vehicle of 10 to 20 seconds, but for signalized intersections is 15 to 25 seconds.

Tables 3.1.3-1, -2, and -3 provide an interpretation of the level of service results. All of the techniques share common features: they use stopped delay per vehicle (in seconds) as the “measure of effectiveness”; and they portray the estimated LOS in terms of a letter “grade,” which ranges from “A” (no delay/excellent conditions) to “F” (major delays/poorest conditions). For 2-way stop controlled intersections, the level of service can vary greatly depending on the turn movement involved, so is shown for each major stopped approach. When left and right turns share the same approach lane, only a single arrow representing the level of service for both turning movements is shown.

Table 3.1.3-4 and Figure 3.1.3-6 shows that intersection levels of service are mostly in the “B” or “C” range on Stony Point Road, “E” or “F” along Highway 12, and vary considerably at other locations. Santa Rosa bases its traffic LOS standard on *arterial (corridor)* level of service, using LOS “D” as the standard. This standard is based upon traffic movement along a corridor, which

TABLE 3.1.3-1
LEVEL OF SERVICE DEFINITIONS - SIGNALIZED INTERSECTION

Level of Service	Delay (secs.)	Description
A	£5.00	Free Flow/Insignificant Delays: No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.
B	5.1 - 15.0	Stable Operation/Minimal Delays: An occasional approach phase is fully utilized. Many drivers begin to feel somewhat restricted within platoons of vehicles.
C	5.1 - 25.0	Stable Operation/Acceptable Delays: Major approach phases fully utilized. Most drivers feel somewhat restricted.
D	25.1 - 40.0	Approaching Unstable/Tolerable Delays: Drivers may have to wait through more than one red signal indication. Queues may develop but dissipate rapidly, without excessive delays.
E	40.1 - 60.0	Unstable Operation/Significant Delays: Volumes at or near capacity. Vehicles may wait though several signal cycles. Long queues form upstream from intersection.
F	³ 60.0	Excessive Delays: Represents long delays, but not necessarily "gridlock". Intersections operate below capacity with low volumes. Queues may block upstream intersections.

Source: *Highway Capacity Manual*, Transportation Research Board, Special Report No.209, Washington D.C., 1985.

TABLE 3.1.3-2
LEVEL OF SERVICE DEFINITIONS FOR STOP SIGN CONTROLLED INTERSECTIONS

AVERAGE VEHICLE DELAY IN SECONDS

Level of Service	Delay
A	0-4.99
B	5-9.99
C	10-19.99
D	20-29.99
E	30-45
F	> 45

Source: *1994 Highway Capacity Manual, Special Report 209*, Table, Transportation Research Board, Washington, DC, 1994.

TABLE 3.1.3-3
LEVEL OF SERVICE DEFINITIONS FOR URBAN/SUBURBAN ARTERIALS (HCM
CHAPTER 11)
SPEEDS IN MPH
(FIGURES INDICATE AVERAGE SPEEDS, IN MPH)

LOS	Type I	Type II	Type III
A	≥ 35	≥ 30	≥ 25
B	28-34.9	24-29.9	19-24.9
C	22-27.9	18-23.9	13-18.9
D	17-21.9	14-17.9	9-12.9
E	13-16.9	10-13.9	7-8.9
F	< 13	< 10	< 7

Note: Street types are based on the degree of access control, speed limits, the presence of parking, and the posted speed limits. Type I (suburban) streets typically have widely spaced driveways, posted speed limits of 35-45 MPH, turn lane channelization, and no parking. Type II arterials typically have speed limits of 30-40 MPH, partial control of access from abutting properties; some parking; 4-8 signals per mile; and little pedestrian traffic. Type I arterials typically have speed limits of 40-45 MPH, more access control than type II arterials; no parking; only one to four signals per mile; and low density roadside development. See also the Appendix "B" for more information.

Source: 1985 Highway Capacity Manual, Table 11-7, Transportation Research Board Special Report 209.

may include several signalized intersections. Arterial (corridor) level of service is defined in terms of average travel speed of all through vehicles on the arterial. It is strongly influenced by the number of signals per mile and the average intersection delay.

IMPACTS AND MITIGATION MEASURES

This section documents the results of the traffic model run for the Southwest Area Plan land uses inclusive of Redevelopment Subareas A and B. As noted previously, (refer to the *Introduction* section of this SEIR), impacts in this SEIR are projected to the year 2010 consistent with the buildout assumptions contained in the Southwest Area Plan. This work involved the following steps:³

- Converting the land use information from the plan into the trip generation format developed by the City's Department of Public Works.
- Applying the trip generation model
- Distributing trips to destinations, using a gravity trip distribution model

TABLE 3.1.3-4
Existing Intersection Traffic Levels of Service in the Southwest Plan Area
PM Peak Hour (average delay in seconds per vehicle)
1999 Conditions (except where indicated by *)

Intersection	LOS	Delay
Sebastopol Road/Stony Point Road	E	55
Hearn Avenue/Stony Point Road	F	62
Bellevue Avenue/Stony Point Road* (signal recently installed)	A (southbound left turn) C (westbound movements)	5 11
S. Wright-Fulton Road/Highway 12	E	43
S. Wright Road/Sebastopol Road	F	55
Corporate Center Parkway/Sebastopol Road	B	7
Corporate Center Parkway/Northpoint Parkway	C	8
Dutton Avenue/Highway 12*		
Eastbound Ramps	B	6
Westbound Ramps	B	9
Dutton Avenue/Sebastopol Road	F	61
Hearn Avenue/Dutton Avenue	B	12
Dutton Avenue/Bellevue Avenue	C	6
Hearn Avenue/Corby Avenue	E	45
Baker Avenue/Corby Avenue	E	45

Note: Level of service was calculated using the highest volumes counted in a 60 minute period between 4 and 6 PM. This is typically the hour beginning at 4:15 or 4:30 PM.

Source: All calculations based on 1985 Highway Capacity Manual methods, except unsignalized intersections, where the 1994 Update was used.

- Applying a factor to convert daily trips to peak-hour factoring (i.e., conversion of daily trips to 4:30-5:30 PM trips)
- Modifying the highway network to reflect year 2010 conditions, per the City's and County's circulation elements as well as improvements proposed by Caltrans
- Assigning future trips to the future network (both ADT and PM peak)
- Calculating the PM peak hour (4:30-5:30 PM) level of service resulting from this traffic.

TABLE 3.1.3-5
EXISTING ARTERIAL CORRIDOR LEVELS OF SERVICE
(TYPE FACILITY IN PARENTHESES. SEE TABLE 3.1.3-3 FOR DEFINITIONS)

	Direction	Speed	LOS
Stony Point Road (Type I)			
Highway 12- Hearn Ave.	SB	18.1	D
	NB	16.5	E
Hearn Ave - Todd Road	SB	36.8	A
	NB	25.3	C
Hearn Avenue (Type III)			
Stony Point Road - US 101	EB	19.9	C
	WB	15.1	D
Bellevue Avenue (Type I)			
Stony Point Road - US 101	EB	38.3	A
	WB	38.3	A
Sebastopol Road (Type I)			
Wright Road - Stony Point Road	EB	31.7	B
	WB	16.3	E
Dutton Avenue (Type II)			
Highway 12 - Hearn Avenue	SB	21.8	C
	NB	20.4	C
Duke Court - Todd Road	SB	35.0	A
	NB	35.0	A
Northpoint Parkway (Type I)			
Corporate Center Parkway - Stony Point Road	EB	36.4	A
	WB	34.0	B
Corporate Center Parkway (Type I)			
Sebastopol Road - Northpoint Parkway	NB	32.8	B
	SB	34.8	B
Fulton-Wright Road (Type II)			
Highway 12 - Ludwig Avenue	NB	22.8	C
	SB	28.5	B
Todd Road (Type I)			
Llano Road - US 101	EB	39.1	A
	WB	35.1	A
Corby Avenue (Type III)			
Earle Street - Hearn Avenue	NB	15.7	C
	SB	14.0	C
Hearn Avenue - Bellevue Avenue	NB	21.7	B
	SB	25.0	A

Source: Based on 1985 Highway Capacity Manual, Chapter 11 methods. In some cases, 1993 traffic volumes have been used where 1999 counts were not taken. The 1993 volumes are primarily outside the redevelopment area, however.

The City of Santa Rosa's TRANPLAN traffic model was used to analyze the impacts of the project. This model initially contained 480 traffic analysis zones (TAZ). The model was modified by Dowling Associates to add 14 TAZs in the Southeast Plan Area, for a total of 494 zones. The geographic areas covered by each of the TAZs in the Southwest Plan Area are shown in Figure 3.1.3-7. Land use data was prepared by the City of Santa Rosa in a format compatible with the required trip generation model inputs (number of single and multi-family units, square feet of retail, etc.).

Road Improvements Included in the Traffic Model

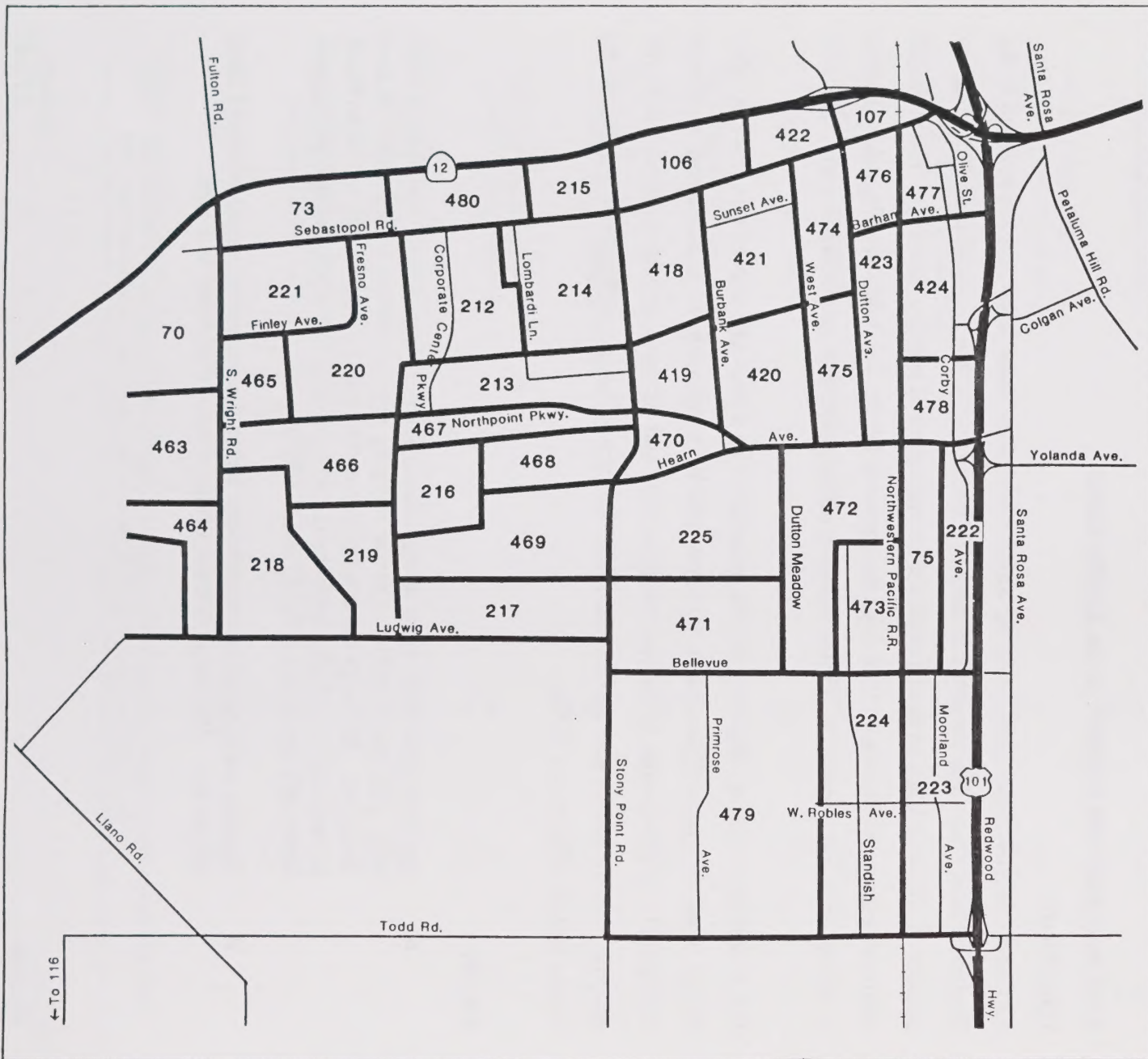
City Streets

City street improvements included in the traffic model were based upon projects included in the Southwest Area Plan. For purposes of modeling future traffic flows, assumptions regarding the number of midblock lanes on streets needed to be made prior to running the model. The principal improvements in the Southwest Plan Area are shown in Figure 3.1.3-8a and - 8b, and are shown in tabular form in Appendix A. Future weekday traffic projections are shown in Figure 3.1.3-9.

For modeling purposes, Highway 12 was assumed to be a four-lane expressway from Wright-Fulton Road to Llano Road, and a two-lane arterial highway from Llano Road to central Sebastopol. Improvements to the two freeways (101 and 12) have also been considered in the analysis. The projection year was the year 2010. The improvements included in the traffic model results include (Figure 3.1.3-8b):

US-101

- Six lanes with HOV lanes through Santa Rosa (2 "mixed flow" lanes and 1 HOV lane, plus one auxiliary lane for merging traffic between interchanges, in each direction). Although not determined at this time, the HOV lanes would probably be restricted to vehicles with two or more persons, and would operate during peak hours only (probably 6-9 AM and 4-6 PM).
- Existing northbound and southbound Baker Avenue ramps would be closed (both directions). The Baker Avenue bridge would be widened to 4 lanes.

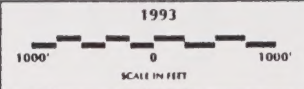


SOUTHWEST PLAN AREA

Dowling Associates

Source: Santa Rosa Southwest MEA,
DKS Associates

**Figure 3.1.3-7
TRANSPORTATION
ZONES IN
PLAN AREA**



SOUTHWEST PLAN AREA

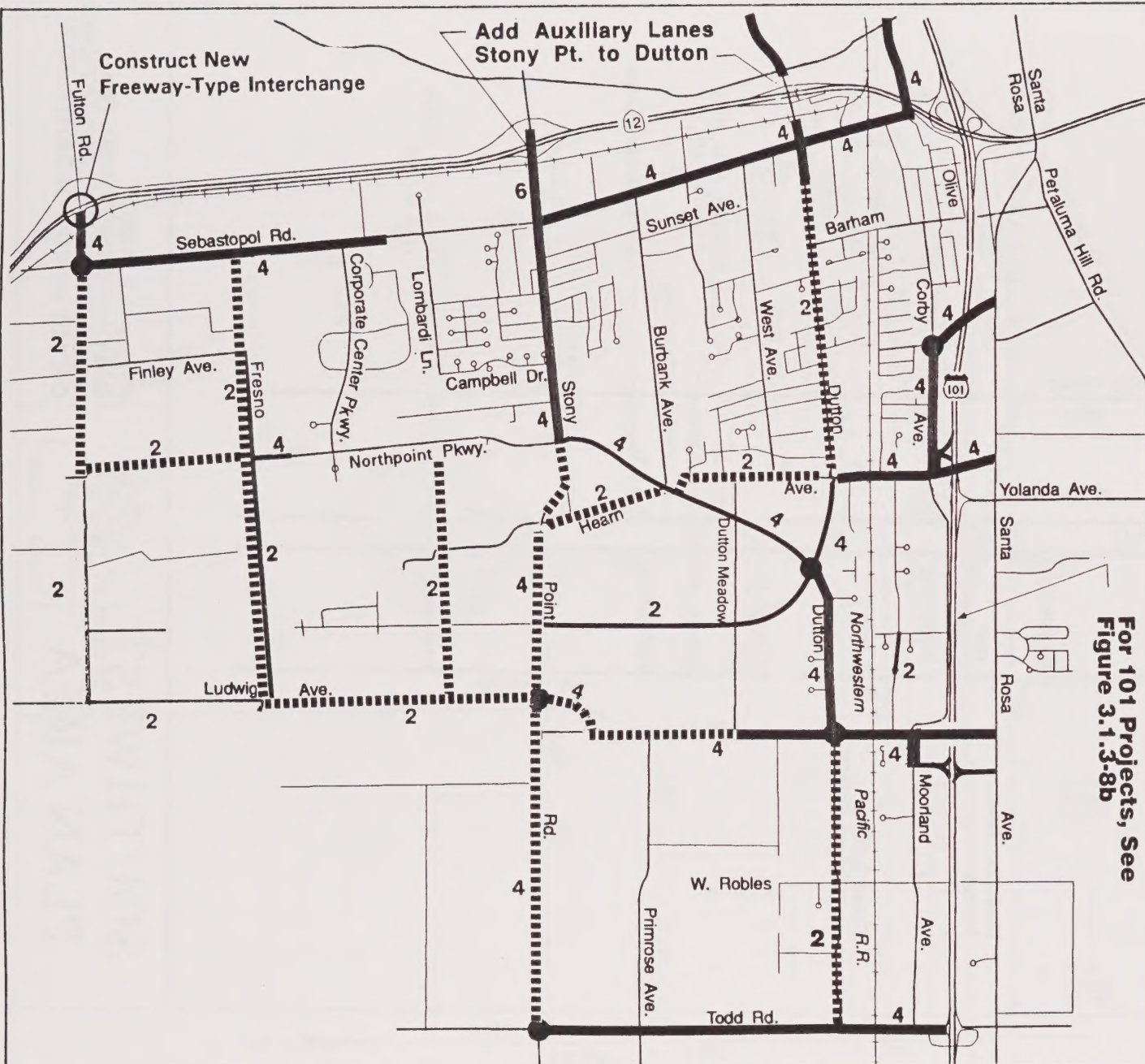
Dowling Associates

- Add Two-Way Left Turn Lane
- Add Travel Lanes (total number of lanes after improvement)*
- New Road
- New Traffic Signal Warranted

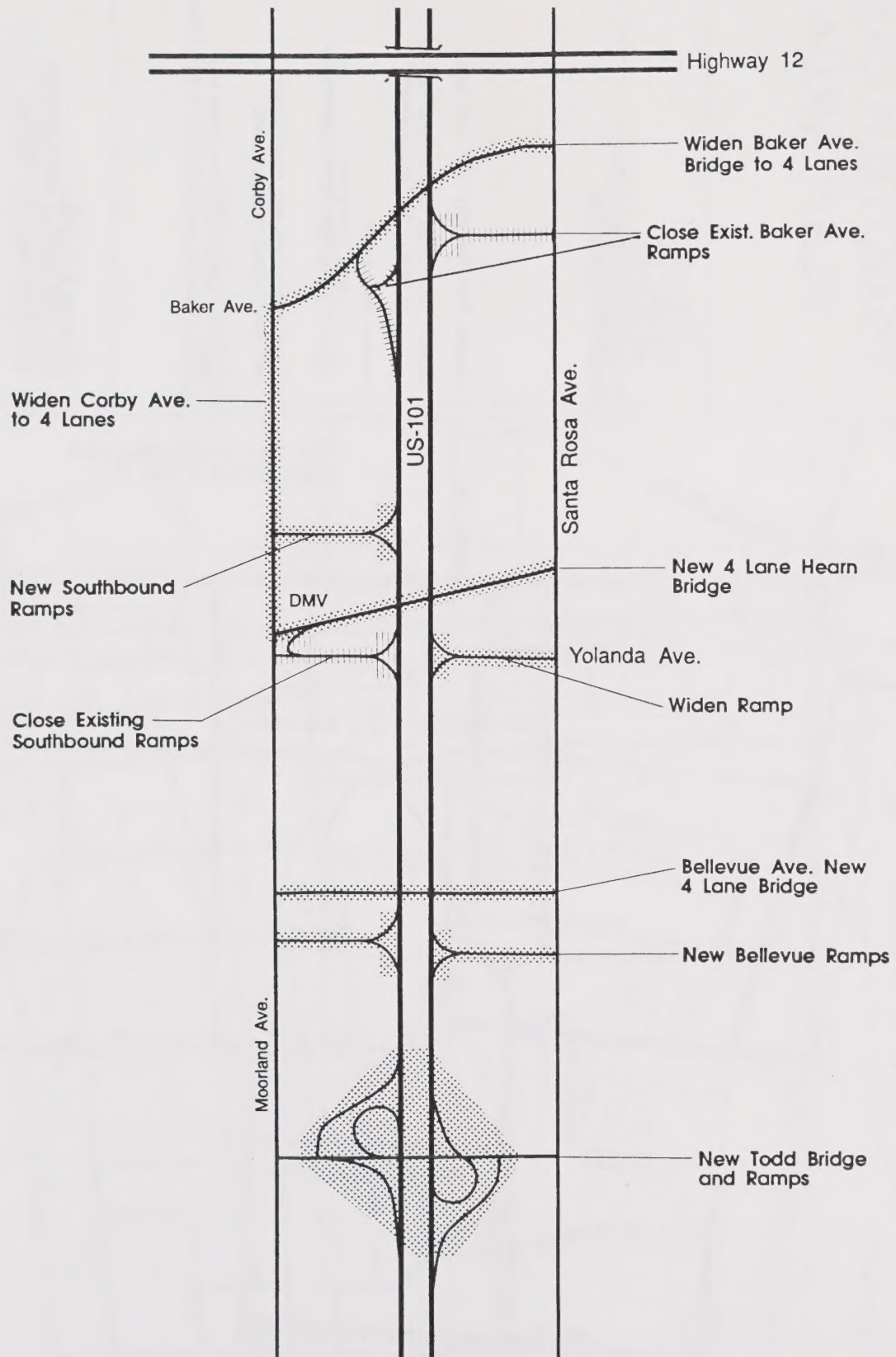
(Road Alignments are Approximate and are Subject to Adjustment)

* Total travel lanes includes thru lanes only (left turn or center two-way left turn lanes not included)

**Figure 3.1.3-8a
MAJOR ROAD PROJECTS
(Excluding U.S. 101)**



For 101 Projects, See
Figure 3.1.3-8b



**SOUTHWEST
PLAN AREA**



**Figure 3.1.3-8b
CALTRANS PROPOSAL For
INTERCHANGE MODIFICATIONS
ON 101 IN SOUTH SANTA ROSA**

Dowling Associates



DEPARTMENT OF



CHANDLER COUNTY DEPARTMENT OF

- Hearn Avenue: location of existing northbound ramps are unchanged; southbound ramps are relocated to about 700' north of the existing bridge. The bridge is widened to four lanes.
- Todd Road interchange rebuilt as a partial cloverleaf ("par clo"). Entry loops are in northwest and southeast quadrants.
- Full interchange at Bellevue Avenue.

Highway 12

- Corporate Center Parkway is extended as a short stub road north of Sebastopol Road to serve traffic from local land uses (traffic zone 480).
- Auxiliary lanes added in both directions between Stony Point and Dutton Avenue.
- Full freeway-type interchange at Highway 12 and Wright-Fulton Roads.

As of September 1999, Caltrans anticipated that construction will begin on the widening of US 101 to six lanes from Wilfred Avenue (Rohnert Park) to Highway 12 in Santa Rosa in the fall of 2000.⁴ The project has been included in the *Statewide Transportation Improvement Program (STIP)*, which is a funding-constrained document (i.e., projects must be buildable within existing revenue sources). The project should be completed by the end of 2002. Some auxiliary lanes will be included in this project. Interchange improvements--at Hearn, Bellevue, Baker, Wright-Fulton, and Todd--are not included in this Caltrans project. Caltrans would require cooperative funding of these improvements with the City, including local contributions of some or all of the cost of these improvements, which is part of the purpose of the Redevelopment Plan Project.

Thresholds of Significance

The following thresholds of significance have been used in this analysis:

For City streets, the *VISION 2020 Santa Rosa General Plan* (1996) sets a goal (TCS-2) of maintaining level of service of "D" or better along all major corridors during the PM peak hour of travel. Exceptions to meeting the standard are: the Core Area (downtown); situations where attainment of the standard would result in significant environmental degradation; situations where topography or environment impacts makes the improvement impossible; and situations where

meeting the standard would ensure loss of an area's unique character. Other exceptions may be granted by the City Council.

For freeways, the Sonoma County Transportation Authority (SCTA) has established a LOS "E" standard for all types of highways. Caltrans likewise has an informal standard of accepting LOS "E" during peak hours in urban areas. Consequently, the thresholds of significance are City streets where the corridor (arterial) LOS would be worse than "D"; and freeways where the LOS is worse than "E".

Development Assistance Program

The Development Assistance Program provides redevelopment financing for land acquisition, deteriorated structure removal, site preparation, relocation assistance, hazardous materials remediation and the removal of concrete runways at the Air Center. Redevelopment financing assistance for these activities would, generate increases in traffic and circulation demand on the local street network by stimulating construction and site development potential. Such projects would include privately sponsored residential, commercial and mixed-use projects.

Impact 3.1.3-1

In the absence of mitigation measures, the Redevelopment Plan project, along with cumulative traffic growth, would have a significant impact (i.e., result in conditions below the City standard) on the following arterial streets (see Table 3.1.3-6): (S)

- *Stony Point Road, from Highway 12 to Hearn Avenue (LOS "F"), and Hearn to Todd Road southbound (LOS "E")*
- *Sebastopol Road, from Wright Road to Stony Point Road westbound, LOS "F"*
- *Dutton Avenue, from Highway 12 to Northpoint Parkway, LOS "E" southbound/"F" northbound*
- *Northpoint Parkway, from Corporate Center Parkway to Stony Point Road (LOS "E/F"), and Stony Point Road to Bellevue Avenue westbound (LOS "F")*
- *Corporate Center Parkway, from Sebastopol Road to Northpoint Parkway southbound (LOS "F")*

**TABLE 3.1.3-6
FUTURE CORRIDOR ARTERIAL LEVEL OF SERVICE -
WITH SOUTHWEST AREA PLAN, NO MITIGATION**

Stony Point Road (Type I)			
Highway 12- Hearn Ave.	SB	2.7	F
	NB	8.0	F
Hearn Ave - Todd Road			
	SB	12.4	F
	NB	31.3	B
Hearn Avenue (Type II)			
Stony Point Road - US 101	EB	21.4	C
	WB	25.1	B
Bellevue Avenue (Type I)			
Stony Point Road - US 101	EB	31.3	B
	WB	32.6	B
Ludwig Avenue (Type I)			
Wright Road - Stony Point Road	EB	33.3	B
	WB	36.7	A
Sebastopol Road (Type I)			
South Wright Road - Stony Point Road	EB	21.4	D
	WB	6.5	F
Dutton Avenue (Type II)			
Highway 12 - Northpoint Parkway	SB	8.8	E
	NB	8.8	F
Northpoint Parkway - Todd Road	SB	35.0	A
	NB	35.0	A
Northpoint Parkway (Type I)			
Corporate Center Parkway - Stony Point Road	EB	4.2	F
	WB	15.0	E
Stony Point Road - Bellevue Avenue	EB	35.0	A
	WB	10.2	F
Corporate Center Parkway (Type I)			
Sebastopol Road - Northpoint Parkway	SB	7.3	F
	NB	14.4	E
Fulton/Wright Road (Type II)			
Highway 12 - Ludwig Avenue	SB	6.4	F
	NB	12.6	E
Todd Road (Type I)			
Llano Road - US 101	EB	17.6	D
	WB	10.7	F
Corby Avenue (Type III)			
Earle Street - Hearn Avenue	SB	14.8	C
	NB	3.9	F
Hearn Avenue - Bellevue Avenue	SB	13.6	C
NB	21.3	B	

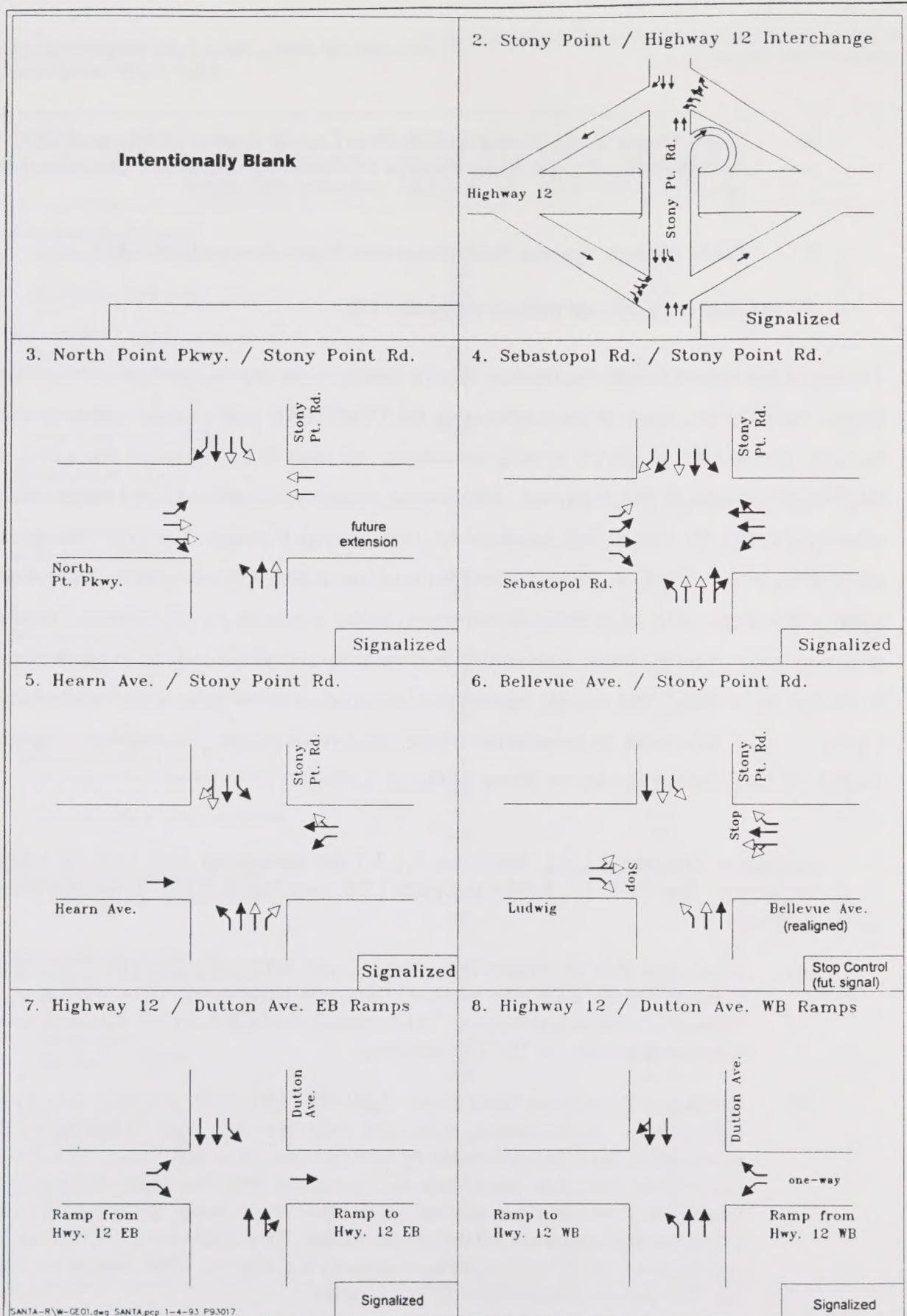
- ***South Wright Road, from Highway 12 to Ludwig Avenue northbound (LOS "F") Todd Road, from Llano Road to US 101 in the westbound direction (LOS "F")***
- ***Corby Avenue, between Earle Street and Hearn Avenue (LOS "F")***

This impact is significant without mitigation (S).

The discussion below provides intersection-specific details on the improvements determined to be needed modeling the effects of the project using the TRANPLAN traffic model. Because of the frequent need to refer to specific turning movements and lanes in the following discussion, the following abbreviations have been used. Northbound, southbound, eastbound, and westbound are referred to as NB, SB, EB and WB, respectively. Left, through ("straight") and right movements are referred to as L, T and R. A northbound left turn lane is thus referred to as the "NBL lane"; where a lane is shared by more than one movement, a slash is used (e.g., T/L indicates "thru/left turns permitted" from the lane). Intersection average delay per vehicle is shown in parentheses, in seconds per vehicle. The existing intersection lane configurations (geometrics) are shown in Figure 3.1.3-10, along with the proposed additional lanes as mitigation. The projected afternoon (4:30-5:30 PM) traffic volumes are shown in Figure 3.1.3-11.

Mitigation Measure 3.1.3-1 See Table 3.1.3-7 for intersection LOS with and without mitigation. See Table 3.1.3-8 for mitigated LOS, and Figure 3.1.3-10 for intersection diagrams.

- (a) Northpoint Parkway/Stony Point Road: Add NBT, SBT and SBL, EBT lanes. Convert existing EBR lane to shared thru/right movements. Two WBT lanes on Northpoint Parkway extension. This improves the LOS from "F" with the existing lane configuration, to "D" (39 seconds).
- (b) Sebastopol Road/Stony Point Road: Add NBT, SBT, SBR, and EBL lanes to this intersection. A westbound right turn only lane had been proposed at this intersection, but is now precluded by development (a new building on the northeast corner) that has taken place since the Southwest Area Plan EIR was prepared. Otherwise, there is room at this intersection (with right of way acquisition) to make this substantial improvement to the intersection. This improves the LOS from "F" (unmitigated) to "E" (55 seconds)—although if the newer 1994 method are used, the LOS and delay would be "D" 35 seconds.



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SOUTHWEST PLAN AREA
Dowling Associates, Inc.

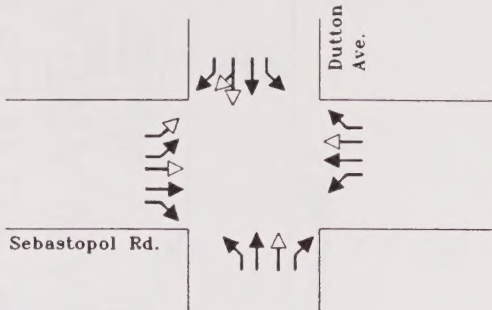
→ Existing Lane
← Proposed Lane



Not to Scale

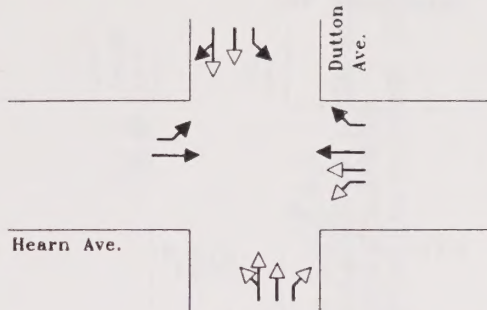
Figure 3.1.3-10a
EXISTING & MITIGATED
INTERSECTION LANE
GEOMETRICS

9. Dutton Ave. / Sebastopol Rd.



Signalized

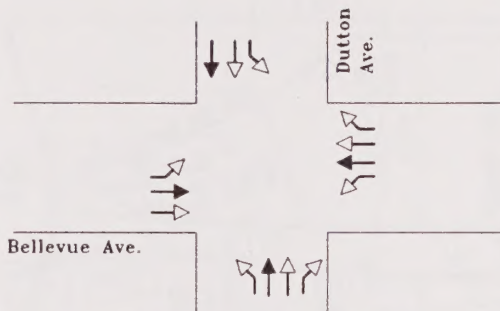
10. Hearn Ave. / Dutton Ave.



Proposed

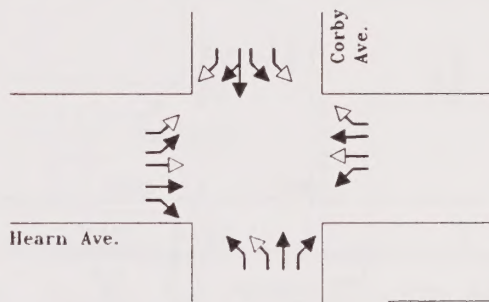
Signalized

11. Dutton Ave. / Bellevue Ave.



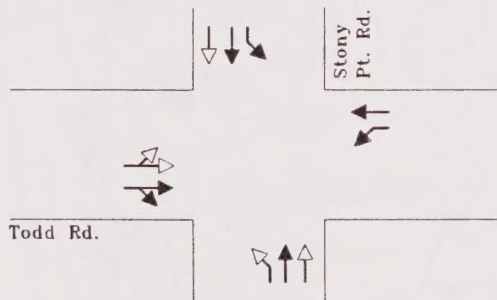
Signalized

12. Hearn Ave. / Corby Ave.



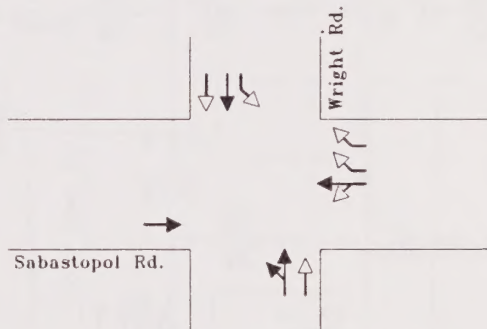
Signalized

13. Todd Rd. / Stony Point Rd.



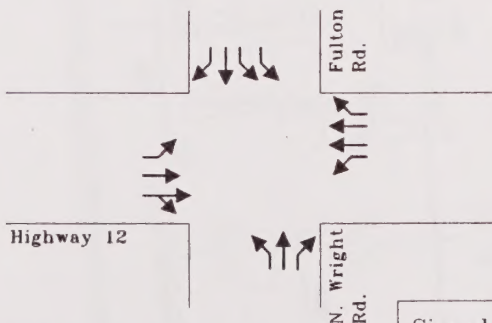
Signalized

14. Wright Rd. / Sebastopol Rd.



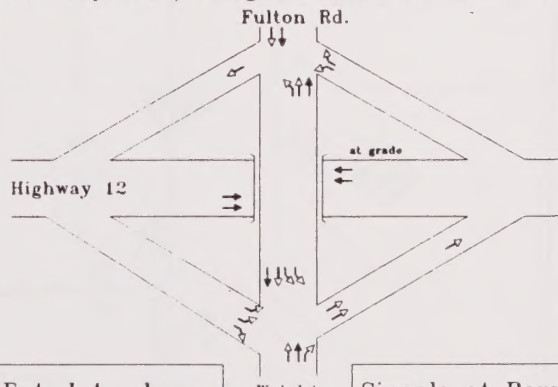
Existing All-Way Stop
Future Signalization

15. Hwy. 12 / S. Wright-Fulton Rd.



Signalized

16. Hwy. 12 / Wright-Fulton Rd. Int.



Fut. Interchange

Wright

Signals at Ramps

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SOUTHWEST PLAN AREA

Dowling Associates, Inc.

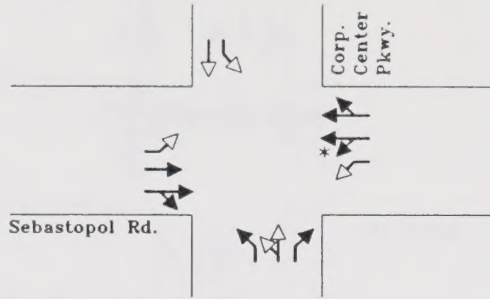
→ Existing Lane
← Proposed Lane



Not to Scale

**Figure 3.1.3-10b
EXISTING & MITIGATED
INTERSECTION LANE
GEOMETRICS**

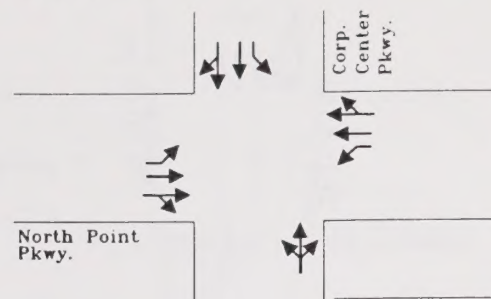
17. Corporate Center Pkwy. / Sebastopol Rd.



* No Shared Left Turn Lane in Future

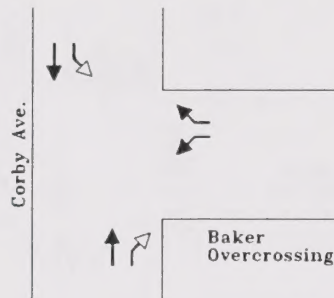
Signalized

18. Corporate Center Pkwy. / North Point Pkwy.



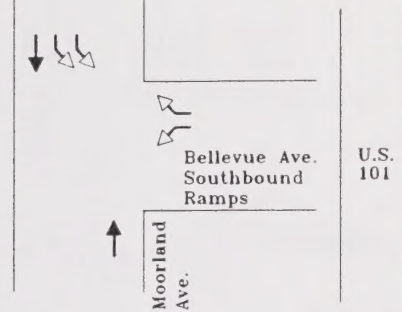
Existing All-Way Stop (Flashing Signal)
Future Signalization

19. Baker Ave. / Corby Ave.



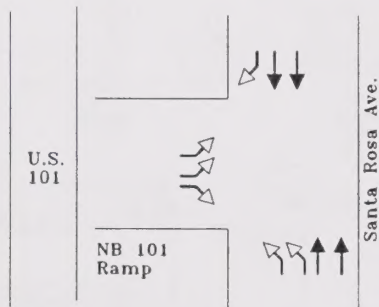
Existing All-Way Stop
Future Signalization

20. Bellevue / 101 SB Ramps (Moorland)



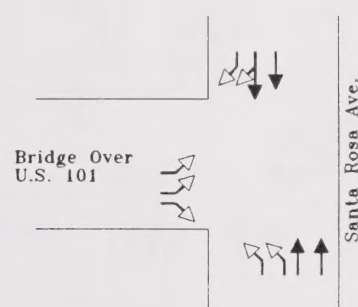
Future Signal

21. Bellevue Ave. / 101 NB Ramps at Santa Rosa Ave.



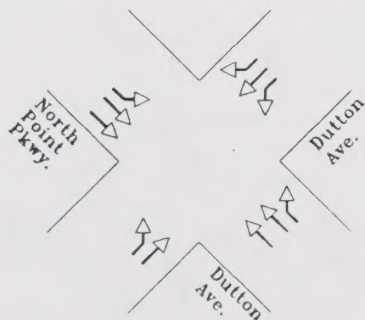
Future Signal

22. Bellevue Ave. Overcrossing of 101 at Santa Rosa Ave.



Future Signal

23. North Point Pkwy. / Dutton Ave.



Future Signal

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SOUTHWEST PLAN AREA
Dowling Associates, Inc.

→ Existing Lane
← Proposed Lane



Not to Scale

Figure 3.1.3-10c
EXISTING & MITIGATED
INTERSECTION LANE
GEOMETRICS

SOUTHWEST PLAN AREA

Dowling Associates

Figure 3.1.3-11
PM PEAK HOUR (4:30-5:30)
TRAFFIC VOLUMES
With Plan (to nearest 100)

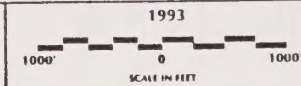
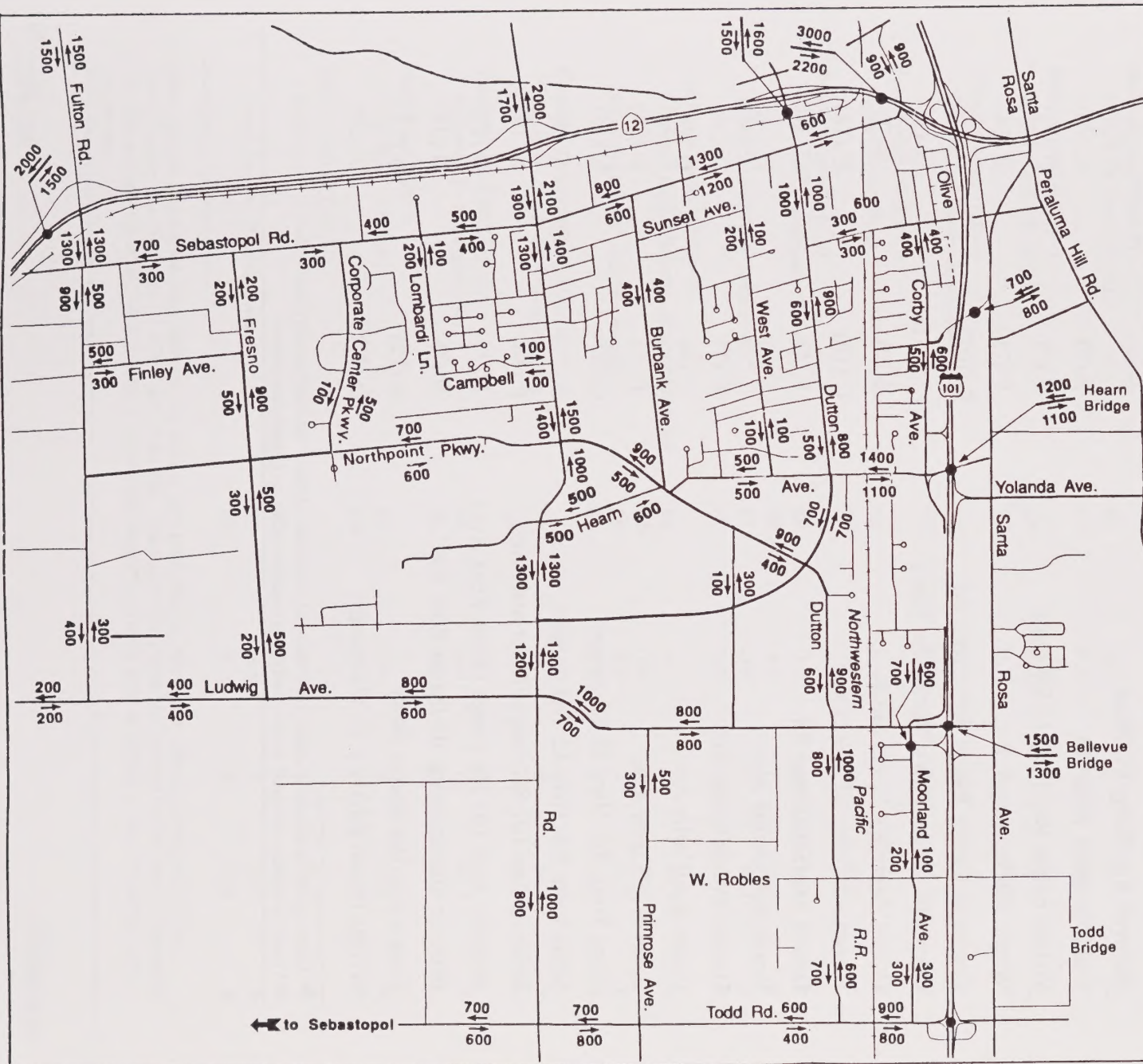


TABLE 3.1.3-7
FUTURE INTERSECTION LEVELS OF SERVICE, WITH SOUTHWEST AREA PLAN -
WITH AND WITHOUT MITIGATION
(AVERAGE STOPPED DELAY PER VEHICLE, IN SECONDS)

Intersection	Without Mitigations	With Mitigations
Northpoint Pkwy/Stony Point Road	F (*)	D (39)
Sebastopol Rd/Stony Point Rd	F (*)	E (42)
Hearn Ave/Stony Point Rd.	F (*)	C (15)
Bellevue Ave/Stony Pt. Road	F (*)	E (42)
Todd Rd/Stony Point Rd.	F (*)	C (20)
Wright-Fulton Rd./Hwy 12 EB ramp	F (*)	C (22)
Wright Rd/Sebastopol Rd	F (*)	B (14)
Corporate Center Pkwy/ Sebastopol Rd	F (103)	B (15)
Corporate Center Pkwy/Northpoint Pkwy	F ** (51)	A (3)
Dutton Ave/Hwy 12 EB ramps	B (7)	B (7)
Dutton Ave/Hwy 12 WB ramps	C (18)	C (18)
Dutton Ave/Sebastopol Rd.	F (*)	D/E (40)
Hearn Ave/Dutton Ave.	F (*)	D (26)
Dutton Ave/Bellevue Ave	F (*)	D (36)
Hearn Ave/Corby Ave	F (*)	D (39)
Baker Ave/Corby Ave	F (*)	C (24)
Stony Point Rd/ Hwy 12 EB ramps	C (25)	C (17)
Stony Point Rd/ Hwy 12 WB ramps	B (11)	B (5)
Bellevue Ave/101 SB ramps (Moorland Ave)	F (88)	B (10)
Bellevue Ave/ 101 NB ramps (Santa Rosa Ave)	F (*)	D (29)
Bellevue Overcrossing 101/Santa Rosa Ave	F (*)	D (34)
Dutton Ave/Northpoint Pkwy	B (12)	B (12)
Wright-Fulton Rd/Hwy 12 WB ramps	D (37)	D (30)

* Delay cannot be calculated due to over saturated conditions (demand exceeds capacity).

** Level of service calculated is for all-way stop condition (existing intersection control).

**TABLE 3.1.3-8
FUTURE CORRIDOR LEVELS OF SERVICE – MITIGATED AND UNMITIGATED**

Street and Segment(s)	Direction	Unmitigated		Mitigated	
		Speed	LOS	Speed	LOS
Stony Point Road (Type I)					
Highway 12- Hearn Ave.	SB	2.7	F	17.9	D
	NB	8.0	F	18.0	D
Hearn Ave - Todd Road	SB	12.4	E	31.5	B
	NB	31.3	B	23.1	C
Hearn Avenue (Type II)					
Stony Point Road - US 101	EB	21.4	C	21.0	C
	WB	25.1	B	23.6	C
Bellevue Avenue (Type I)					
Stony Point Road - US 101	EB	31.3	B	23.8	C
	WB	32.6	B	23.5	C
Ludwig Avenue (Type I)					
South Wright Road - Stony Point Road	EB	33.3	B	20.7	D
	WB	36.7	A	36.7	A
Sebastopol Road (Type I)					
Wright Road - Stony Point Road	EB	21.4	D	28.6	B
	WB	6.5	F	22.4	C
Dutton Avenue (Type II)					
Highway 12 - Northpoint Parkway	SB	8.8	E	21.4	C
	NB	8.8	F	20.5	C
Northpoint Parkway - Todd Road	SB	35.0	A	27.3	B
	NB	35.0	A	24.8	B
Northpoint Parkway (Type I)					
Corporate Center Parkway - Stony Point Road	EB	4.2	F	33.7	B
	WB	15.0	E	38.0	A
Stony Point Road - Bellevue Avenue	EB	35.0	A	27.4	B
	WB	10.2	F	29.1	B
Corporate Center Parkway (Type I)					
Sebastopol Road - Northpoint Parkway	SB	7.3	F	33.4	B
	NB	14.4	E	36.0	A
Fulton/Wright Road (Type II)					
Highway 12 - Ludwig Avenue	SB	6.4	F	27.2	B
	NB	12.6	E	20.7	C
Todd Road (Type I)					
Llano Road - US 101	EB	17.6	D	32.8	B
	WB	10.7	F	32.5	B
Corby Avenue (Type III)					
Earle Street - Hearn Avenue	SB	14.8	C	20.5	B
	NB	3.9	F	24.3	B
Hearn Avenue - Bellevue Avenue	SB	13.6	C	23.3	B
	NB	21.3	B	21.6	B

Note: Certain travel speeds may decrease as a result of new traffic signals, which add delay for certain intersection through movements that were not STOP-sign controlled. The signals are necessary to provide for the orderly movement of traffic and enhance safety; in some cases it appears that mitigations reduce level of service, at least for certain traffic movements.

- (c) Hearn Avenue/Stony Point Road: This intersection was signalized since the Southwest Area Plan EIR was prepared. Improvements yet to be made include: add NBT, NBR, and SBT/R lanes to the intersection. This makes a substantial improvement in the intersection LOS, from "F" to "C" (15 seconds).
- (d) Bellevue Avenue/Stony Point Road: A signal at this location has been installed. When the Bellevue/Ludwig connector is built, this signal should be relocated. At the intersection of the Bellevue-Ludwig connector and Stony Point Road, it will be necessary to add a NBL, NBT, WBT/L, WBR, SBL, SBT lanes; to the Ludwig Avenue approach (with realignment of the intersection), add an EBR lane. This improves the intersection LOS from "F" to "E" (42 seconds).
- (e) Dutton Avenue/Sebastopol Road: Add NBT, WBT, SBT/R, EBL, and EBT lanes to this intersection. There are heavy turning volumes to and from Highway 12 at this location. This improvement causes LOS to go from "F" to "D/E" (40 seconds).
- (f) Hearn Avenue/Dutton Avenue: This intersection has been signalized since the Southwest Area Plan EIR was completed. The new approach on the proposed Dutton Extension would have a NBT/L lane, NBT, NBR lanes; Hearn would need to have added WBL and WBT lanes; the existing southbound Dutton approach widened by adding a SBT lane. This improves the LOS from "F" to "D" (26 seconds).
- (g) Dutton Avenue/Bellevue Avenue: Signalize this two-way STOP controlled intersection. Add NBL, NBT, NBR, WBL, WBT, WBR, SBL, SBT, and EBL and EBT lanes. This improves intersection LOS from "F" to "D" (36 seconds).
- (h) Hearn Avenue/Corby Avenue: Add NBL, WBT, WBR, SBL, SBR, EBL, and EBT lanes. This improves the LOS from "F" to "D" (39 seconds).
- (i) Todd Road/Stony Point Road: The County of Sonoma completed a signalization project that included adding a WBL turn lane (on Todd Road), a SBL on Stony Point, and adding shoulders and lane channelization. The additional lanes required after this improvement would be: NBL, NBT, and SBT lanes. This improves the LOS from "F" to "C" (20 seconds).
- (j) Wright Road/Sebastopol Road: Signalize this presently all-way STOP controlled intersection. Add a NBT, two WBR, a SBL, and a SBT lane to the intersection. This improves the LOS from "F" to "B" (14 seconds).
- (k) Highway 12/Wright-Fulton Roads: Construct full freeway type interchange, with signalized ramp junctions. The exact configuration of the ramps will need to be determined in order to minimize environmental impacts and cost. Tentatively, a diamond type interchange has been used for analysis, which would have PM peak LOS of C (22 seconds) in the eastbound direction, and "D" (30 seconds) in the westbound direction. This project is part of the Southwest Area Plan, so is actually not a mitigation (it was originally proposed in 1958).
- (l) Corporate Center Parkway/Sebastopol Road: Add a NBT/L, WBL, and EBT lanes to the existing streets. Add a southbound approach to serve land development

- north of this intersection, which would have a SBT and SBL lane. Intersection LOS would be “E” (42 seconds) in the future, compared to “F” without mitigations.
- (m) Corporate Center Parkway/Northpoint Parkway: Convert existing flashing red (effectively, all way STOP) operation to normal signal operation. No additional physical improvements required. Future LOS improves from “F” to “A” (3 seconds).
 - (n) Baker Avenue/Corby Avenue: Add NBR and SBL lanes to accommodate increased traffic traveling to and from US 101 (and the east side of the freeway). Signalize intersection and provide appropriate turn lane lengths. This improves LOS from “F” to “C” (24 seconds).
 - (o) Bellevue Avenue Interchange at US 101: This interchange is included in the Southwest and Southeast plans, so is not actually a mitigation. By providing the intersection lane configurations shown in Figure 3.1.3-10, the future intersection LOS will be “D” or better during peak hours.
 - (p) Northpoint Parkway/Dutton Avenue: This future intersection warrants signalization and should have the intersection geometrics shown in Figure 3.1.3-10c.

The above mitigation measures would reduce street corridor impacts to insignificant levels. (I)

Mitigates:	Impact 3.1.3-1 (I)
Implementation:	City of Santa Rosa in conjunction with project sponsors where determined necessary and appropriate in accordance with City policy.
Responsibility:	City of Santa Rosa, Department of Public Works in conjunction with the Department of Community Development, Engineering Division.
Monitoring:	City of Santa Rosa, Department of Public Works in conjunction with the Department of Community Development, Engineering Division.

Impact 3.1.3-2

The Redevelopment Plan project, along with cumulative traffic growth, would have a significant impact (LOS “E” or worse) on US 101 from Wilfred Avenue to Highway 12. The LOS is projected at “F” in this area. Average travel speeds would be in the 9-25 MPH range during the PM peak hour. This is an unavoidable significant impact (SU).

The level of service on the freeway mainline has been analyzed for the year 2010 in the area of the project. This is shown in Table 3.1.3-9. The table shows that traffic conditions along Highway 12 would generally be good, even during peak hours. Traffic LOS on 101 would be “F” from the Todd Road to the Highway 12 interchange, which is comparable to the existing

TABLE 3.1.3-9
YEAR 2010 FREEWAY MAINLINE LEVELS OF SERVICE
WITH SOUTHWEST AREA PLAN, 4:30-5:30 PM
VOLUMES AND CAPACITIES EXPRESSED IN VEHICLES PER HOUR (VPH)

Route	Segment	Demand	Capacity*	LOS	Speed***
101 Todd-Bellevue**	NB	4,900	4,850	F	9
	SB	4,400	4,850	F	18
101 Bellevue-Hearn (Yolanda)	NB	4,300	4,850	F	18
	SB	4,100	4,850	F	25
101 Hearn-Highway 12	NB	4,700	4,850	F	13
	SB	4,400	4,850	F	18
12 US 101-Dutton	EB	2,200	4,350	B	56
	WB	3,000	4,350	D	42
12 Dutton-Stony Point Road	EB	2,700	4,350	B	54
	WB	1,800	4,350	B	58
12 Stony Point Road to Wright-Fulton Road	EB	1,000	3,600	B	58
	WB	1,700	3,600	B	58

Notes:

*• Capacity is based upon the physical (LOS "E/F") capacity. Under this option, HOV lanes on US 101 would be operative during peak hours in both directions.

** Under Caltrans alternative, the existing Santa Rosa Avenue ramps (northbound off/southbound on) are closed.

*** Speed is in MPH and is output directly from TRANPLAN model. Level of service is based upon speed, using 60 MPH as the design speed for both US 101 and Highway 12. See Table 3-1, *Highway Capacity Manual*, Transportation Research Board SR-209, 1985. Speeds do not include the (favorable) impacts that ramp metering would have upon mainline traffic speeds.

(1999) traffic conditions. This worsening, despite freeway widening, occurs for several reasons. The main reasons are cumulative traffic growth, and the assumption that the new freeway mainline lanes would be reserved for buses and carpools. In order to promote use of these high occupancy vehicles (HOV), these lanes are deliberately intended to operate at less than capacity (so that they can provide faster speeds than the other lanes). This represents a trade-off between providing an incentive for using HOV's, and increasing the speed of all vehicles. The scenario portrayed in the table represents a worst-case situation for EIR purposes.

Mitigation Measure 3.1.3-2 (SU)

The cumulative impact of traffic volumes would cause the 101 freeway to operate at below the level of service standard during the peak hours. Possible mitigation options include:

- Enforcing HOV lane use (restriction) only in northbound direction during the PM peak, rather than both directions.
- Providing no HOV lane on US 101 (added lanes open to all traffic).
- Widening of 101 to 8 basic lanes in critical areas (Todd to Highway 12).
- Implementing light rail or commuter rail services on the Northwestern Pacific Railroad line.

Because there is presently no commitment by Caltrans or SCTA to implement either of these mitigation measures, and because of their uncertainty, impact 3.1.3-2 as described above would remain significant and unavoidable. (SU)

Impact 3.1.3-3

The demand for transit trips in the Southwest Area would increase because of growth and development. Existing transit services in the Southwest Area currently have excess capacity, so the extent of the impact would depend upon how much service were expanded (as needed) to serve new demand. The City's Transit and Parking Department has expressed concern that it may not be able to expand service unless additional funding is found. (PS)

Mitigation Measure 3.1.3-3 (I)

The City's *Long Range Transit Plan* (June 1990) provides for an array of bus service improvements based on public input and technical analysis:

- additional routes and route extension building on the current system;
- additional weekday and Saturday night service until 11 PM;
- new commute-oriented bus service during weekday peak hours only;
- additional Sunday service (an hour earlier and later);
- expansion of transportation systems management programs citywide.

The Plan proposes expansion areas in the quadrant bounded by S. Wright Road, Ludwig Avenue, and the existing Route 20; and the area bounded by Hearn, South Dutton Avenue, Bellevue Avenue, and Corby Avenue. These are identified as long term service need areas. The plan notes that, "beyond the baseline system, additional revenue sources are needed to implement most of the short term improvements and all of the long term improvements." (page 2-13). However, the added population and retail activity in the

Southwest Area will contribute sales tax revenues (transportation development act money) that will provide operating support to City Bus.

The Northwestern Pacific (NWP) Railroad right-of-way provides a significant opportunity for providing a high-capacity, high-quality transit service in the Southwest Plan Area. The Sonoma County Transportation Authority is currently studying various options for using the NWP for transit purposes in the future. The Southwest Area Plan notes that the NWP tracks and Bellevue Avenue would be a logical location for a transit station. In addition, another transit station site will probably be required somewhere between Hearn and Baker Avenues.

Even if no rail transit is operated on the NWP for many years, the sites could be used as bus transfer centers and/or park-and-ride lots for commuters on Highway 101. Early identification of sites would enhance the facilities' compatibility with their neighbors, and denser uses should be considered around these future station locations.

The traffic modeling takes into account transit ridership through appropriate reductions to the vehicle trip generation rates. This simple technique is appropriate for Santa Rosa, since transit is a small percentage of work trips made within Sonoma County. Transit modeling done for the Sonoma County General Plan (1989) indicated that even with substantial upgrading of the existing transit network (about a 40 percent increase in bus frequency, and new express routes) that the daily work trip mode split would still only be about 2.8%, and for non-work trips, the weekday mode share carried by transit would be about 0.5%.⁵ However, if the transit system (network) were substantially improved, then the vehicle trip generation could be reduced further than what is assumed in the modeling work. Sonoma County Transit (SCT) would probably increase service frequencies in the future, as demand warrants and as funding permits. There has also been discussion of providing express (commuter oriented) bus service along Stony Point Road in the future, at least as far south as Rohnert Park, and possibly to Petaluma. Other measures to promote transit service ~~could~~ include:

- Providing bus turnouts along major (arterial) streets with existing/potential bus service in the Southwest Plan Area. Bus stop locations should be coordinated with City Bus and SCT staff.
- Achieving reasonable and justified reductions in parking requirements where an aggressive transit or TSM program is agreed to by the developer.
- Implementing of the City's Long Range Transit Plan.
- Promoting use of shared parking facilities where multi-use sites are developed.
- Encouraging site plans with buildings located close to streets (and thus bus stops), rather than traditional developments where buildings are set back many hundreds of feet and surrounding by a "sea" of parking.

- Encouraging site plans that provide clear and convenient pedestrian access between major activity centers and nearby bus stops. Discourage artificial barriers to pedestrian circulation, such as walls or fences. These barriers inhibit both walking and transit travel.

Mitigates:	Impact 3.1.3-3 (I)
Implementation:	City of Santa Rosa Department of Transit and Parking in conjunction with project sponsors, Department of Public Works and Community Development Department where determined necessary and appropriate in accordance with Department policy.
Responsibility:	Department of Transit and Parking.
Monitoring:	Department of Transit and Parking.

Impact 3.1.3-4

Through growth, the Redevelopment Plan project would encourage increased vehicular traffic, including use of local and collector streets in developed portions of the Southwest Plan Area. This could adversely affect the sense of residential environment and affect safety, and would be a potentially significant impact. (PS)

Mitigation Measure 3.1.3-4 (I)

Several techniques are available for improving the residential street environment.

Street Design

Incorporation of good street designs is by far the best way to reduce traffic speeds on local streets and improve the residential environment. This can be done by avoiding long, straight streets that encourage high speeds; liberal use of "T" intersections (to reduce speeds and the number of conflicts at intersections); and providing a street system that encourages people to use collector and arterial streets, rather than local streets, for longer trips. Other techniques (usually involving a traffic control device, or road undulations or "chokers") can be used to mitigate problems on *existing* streets, but are often not as effective. Good transportation planning makes it unattractive for pass-through traffic to enter a neighborhood. (I)

Neighborhood Traffic Management

Techniques that can be used on both existing and proposed streets include:

- Traffic chokers at intersections. These create a "bulbed" effect at intersections, and so reduces pedestrian crossing distance of streets, and tend to reduce vehicle speeds. These should be used primarily on residential and minor collector streets.
- Speed humps, or "undulations." These differ from more traditional "speed bumps" in that they have a longer cross-section (typically 12-14 feet). Modest reductions in average speed can sometimes be achieved with speed humps,

typically 5 MPH.⁶ Advanced signage should be placed in conjunction with the humps. The cross-section length can be adjusted to accommodate different speeds of traffic (longer cross-sections for higher speeds).

- The use of all-way STOP signs for speed control should only be used as a last resort. Numerous studies have indicated that these devices are ineffective at controlling overall speeds, and may actually cause people to speed up between intersections (although they reduce speeds near the intersection). Where not required to stop by traffic, studies have shown that 40-60% of all vehicles will only come to a rolling stop (below 5 MPH), and 20-40% will pass through at higher speeds.⁷ STOP signs should be used where warranted by high traffic volumes, or where sight lines are restricted enough to create a potential safety hazard.
- Street connections should be provided between adjacent subdivisions wherever topography permits and the connection would not encourage "cut through" traffic in one (or both) subdivisions. Street connections should allow local, short distance trips (such as between home and school) to avoid use of busy arterial streets, thereby reducing vehicle-miles of travel and congestion. They also provide shorter paths for pedestrians and cyclists, and also facilitate emergency vehicle access.

Mitigates:	Impact 3.1.3-4 (I)
Implementation:	City of Santa Rosa in conjunction with project sponsors where determined necessary and appropriate in accordance with City policy.
Responsibility:	City of Santa Rosa, Department of Public Works in collaboration with Community Development Department.
Monitoring:	City of Santa Rosa, Department of Public Works.

Impact 3.1.3-5

The Redevelopment Plan project in conjunction with cumulative growth would increase the demand for non-motorized transportation in the area, i.e., bicycle and pedestrian travel. This is not a significant impact (I).

The major pedestrian and bicycle attractions in the Southwest would be:

- Public parks located throughout the area
- Public schools
- Shopping/ commercial areas, such as the Sebastopol Road shopping district and proposed new community/neighborhood centers

Mitigation Measure 3.1.3-5

None specifically required for the proposed Redevelopment Plan Project.

The pedestrian needs have been addressed through the policies of the Area Plan including:

- A well connected internal circulation system, that, to the extent possible, minimizes pedestrian crossings of major streets
- Mixed land uses that minimize distances for daily trip activities, and thus promote walking and cycling as alternatives to the auto
- Providing sidewalks on streets

Proposed bikeway routes would include the Petaluma & Santa Rosa Railroad right-of-way (Joe Rodota Trail) to Sebastopol; Santa Rosa Creek bikeway; Colgan and Roseland Creek Trails; and Class II bike lanes along S. Wright Road, Corporate Center Parkway, Fresno Avenue, Stony Point Road, Dutton Avenue, Sebastopol Road, Northpoint Parkway (and extensions), and Bellevue-Ludwig Avenue. This would provide an extensive grid of bicycle routes to serve the major attractions for bicycle trips in the area. (I)

Impact 3.1.3-6

The development of different areas in the Southwest Plan Area would create the need to make improvements on individual streets and roads. The precise impact of each significant, or potentially significant development, should be considered in the traffic impact analysis prepared for each site. The Southwest Area Plan lays out a phasing program of transportation projects that should keep traffic level of service within acceptable standards. Future traffic conditions will depend upon the timing and occupancy of future developments, which will depend upon market conditions and numerous factors that are outside the control of the City. For short periods of time (perhaps several months to several years), traffic level of service may fall below standards until transportation improvements can be implemented. This is a potentially significant impact (PS).

Mitigation Measure 3.1.3-6 (I)

Mitigation measures shall include:

- Traffic improvements will be implemented to assure that there will be adequate and timely funding of all of the transportation and roadway improvement projects anticipated in the Plan.
- Periodic data collection programs (such as traffic counts, delay and travel time studies) conducted by the City and by project applicants as part of the monitoring program to assess traffic conditions, and suggest necessary changes to the timing of projects. It is recommended that property owners pay an annual fee to allow the City to recoup the costs of the monitoring program.

- Building traffic improvements sooner than the phasing program calls for, whenever opportunities appear for additional public and/or private funding, and demand at present or in the near future warrants.

Mitigates:	Impact 3.1.3-6 (I)
Implementation:	City of Santa Rosa Department of Public Works in collaboration with the Community Development Department.
Responsibility:	City of Santa Rosa, Department of Public Works.
Monitoring:	City of Santa Rosa, Department of Public Works.

Public Projects Program

The Redevelopment Plan includes provision for a series of infrastructure projects to accommodate growing public service needs associated with the 1994 Southwest Santa Rosa Area Plan. The Redevelopment Plan includes financing for roadway improvement projects, storm drain improvement projects, sewer system improvement projects, and municipal water system upgrades. The main concern regarding these projects with respect to traffic and circulation would be temporary road closures, temporary obstructions to property access and obstructions caused by construction vehicle traffic during the various construction periods.

Impact 3.1.3-7

Infrastructure construction would lead to increased truck and construction vehicle activity on the local roadway network in the area of construction. Construction related traffic would be expected to require temporary road closures, temporary obstructions to property access and travel delays and congestion caused by construction vehicle traffic during the various infrastructure construction periods. This would be a potentially significant impacts. (PS)

Depending on the infrastructure project (roadway, sewer, water or drainage improvement project), location, duration and timing, such projects can be expected to create temporary impacts (vehicular delay) due to the presence of construction activities as well as the occasional need to impede traffic. Depending on how the infrastructure construction is staged, there may be a need to temporarily close traffic lanes and/or intersections (or portions thereof) in the vicinity of the construction site on a temporary basis causing inconvenience to residents and travelers.

The traffic impacts associated with this type of construction activity would largely be limited to trucks and heavy equipment moving in and out of the construction sites as needed. Depending

on details of the construction plans, there may be trucks associated with earth-moving activity in the early stages of a project. Impacts on residential access would be greatest in the AM peak when construction is going on (most contractors typically quit before residents return home from work). Because detailed infrastructure construction plans have not yet been prepared, it is not possible to further quantify these impacts.

Mitigation Measure 3.1.3-7 (I)

A construction traffic management plan shall be prepared prior to the beginning of work on infrastructure projects. The plan shall identify strategies to maintain adequate service levels on local roadways and provide access to residential and business sites. (I)

Advance notice of construction activity shall be provided to homeowners through letters or leaflets, and in the general media (such as newspaper advertising). Sufficient penalties (or bonuses) shall be included in the construction contracts to encourage prompt completion of a contract by the contractor.

If the City of Santa Rosa desires to continue to maintain existing service levels in peak hours during the construction period, it shall consider limiting construction so that additional trucks are not added to the roadway system in the peak hours.

Mitigates:	Impact 3.1.3-7(I)
Implementation:	Traffic Management Plan complete before beginning of construction. Provide notices during construction.
Responsibility:	Construction contractor.
Monitoring:	Department of Public Works

Housing Program

The Housing Program provides redevelopment assistance to build, improve and preserve low and moderate income housing. Redevelopment financing for these activities could generate impacts to traffic and circulation through the stimulation of development within Redevelopment Subareas A or B, or the Southwest Plan Area as a whole. Therefore, the discussion of traffic and circulation impacts and mitigation measures as addressed under the Development Assistance Program and Public Projects Program would apply equally to the Housing Program.

Notes - Traffic and Circulation

1. VISION 2020: The *General Plan for Santa Rosa* prepared by the City of Santa Rosa Department of Community Development, 1996.
2. Services provided under schedule effective 8/15/99.
3. Additional information on model calibration, i.e. the process by which the model is adjusted to make sure it adequately represents actual traffic counts, can be found in Technical Memorandum #2, "Southwest Master Environmental Assessment Traffic Study," prepared by DKS Associates, 1990. In most cases, model-predicted link volumes for the calibration years (1987 and 1990) were found to be within 10% of the actual (counted) volumes. On high volume streets, and freeways, the model is generally more accurate than the 10 percent range.
4. Sonoma County Transportation Authority Staff Report, 9/13/99.
5. DKS Associates, "Transportation Technical Reports, Phase III Final Report, Volume I and Appendices," prepared for the Sonoma County Planning Department, October 1987, p. vii.
6. Anton Dahlerbruch, "Speed Humps: Implementation and Impact on Residential Traffic Control," *Compendiums of Papers*, 1993 ITE District 6 Meeting, Las Vegas, NV. p. 265. The speed reduction can vary greatly depending upon location.
7. Homburger, Wolfgang S. Residential Street Design and Traffic Control. Prentice-Hall Publishers, 1989, p. 81.

3.1.4 PUBLIC SERVICES

INTRODUCTION

This section of the EIR addresses the public service impacts of the proposed Redevelopment Plan, including the Development Assistance Program, the Public Projects Program, and the Housing Program. Information from the Southwest Santa Rosa Area Plan Final Environmental Impact Report (FEIR, March 1994) is hereby incorporated by reference and summarized and updated as pertinent. Public services include police protection, fire protection, schools, and parks and recreation.

SETTING

Police Protection¹

Police services in the City of Santa Rosa are provided by the Santa Rosa Police Department. The Department currently consists of 272 personnel compared to 221 personnel in 1994: 178 sworn officers and 94 civilian. The current level of service based upon the 1999 population of the City of Santa Rosa is same as in 1994 which is 1.2 sworn personnel per 1,000 population. However, the Department's current goal and recommended level of service standards for police services have changed since the Southwest Area Plan EIR was prepared. The Police Department's preferred service standards have increased 25% from the minimum of 1.2 officers per 1000 residents to 1.5 officers per 1,000 residents.

Law enforcement services in those portions of the Southwest Plan Area that have already been annexed to the City are provided by the Santa Rosa Police Department (SRPD). The Department divides its coverage of the City into 11 Patrol Zones. Each patrol zone is covered by 1 to 2 police officers depending on time of day, and 3 officers on the weekends. The portion of the Southwest Plan Area currently within the City limits is served by Patrol Zones 2 and 5. Patrol Zone 2 covers the area west of Stony Point Rd. to Fulton Road. Patrol Zone 5 covers the area east of Stony Point Rd to Highway 101.

Law enforcement in the unincorporated portions of the Southwest Plan Area is provided by the Sonoma County Sheriff's Department (SCSD).² The Southwest Plan Area is in the SCSD Zone

7. The SCSD's jurisdiction in the Southwest Plan Area extends from Sebastopol Road, south to Todd Road and from U.S. Highway 101, west to the Laguna area.

The California Highway Patrol (CHP) is responsible for patrolling Highway 101 and State Highway 12 corridor, that border the Southwest Plan Area. In addition, the CHP enforces all vehicle codes in the unincorporated areas of the County, including the investigation of abandoned motor vehicles and motor vehicle accidents, enforcement of speed limits and drunken driving laws, etc. By providing these services, the CHP allows the County deputies to focus on other types of criminal activities and crime prevention programs within the area.

Fire Protection³

Fire protection and emergency services in the City of Santa Rosa are provided by the Santa Rosa Fire Department. The total fire department staff has grown to 118 in 1999 from 115.5 in 1993. The Department operates eight fire stations. Each station has one fire engine with a crew of three personnel, 24 hours per day. Additionally, Station 1 has one ladder truck, which is staffed with four personnel and a battalion chief on-duty 24 hours per day. Minimum staffing at all times is 28 firefighting personnel. The Department also staffs (with personnel from the engine companies) one hazardous materials response unit and one technical rescue unit. There are also four reserve engines and one reserve ladder truck.

The staff and facilities of the Santa Rosa Fire Department are not sufficient to meet the response time standards for the Fire Department, adopted by the City Council. The response time standards are four minutes time for 80% of emergencies, five minutes for 90% of emergencies, and six minutes for 100% of emergencies. These response times are measured from the time the call for emergency services is received in the dispatch center until the first fire company arrives on the scene. Response statistics from January through September 1999 show that the actual performance was 4 minutes for only 32% of the emergencies, 5 minutes for 57% of the emergencies, and 6 minutes for 83% of the emergencies. Also, the average response time citywide for the Fire Department for 1998 was 4.87 minutes.

Three distinct, but not entirely separate service providers maintain fire coverage of the Southwest Plan Area: the Santa Rosa Fire Department (SRFD), the Rincon Valley Fire District and the Roseland Fire District (RFD). While the Roseland Fire District is a separate legal entity, it has contracted with the City for the provision of fire protection services. The Santa Rosa Fire Department provides fire protection services in exchange for the majority of the Roseland District's property tax revenues. All the equipment at the Roseland Fire Station is provided by the City, and all the station personnel are City employees. The southern end of the Southwest Area is served from the Fire Station of the Rincon Valley Fire Protection District at 207 Todd Road. The City of Santa Rosa has an agreement with the new Rincon Valley/Bellevue Fire Protection District that they will send out an engine if the District has a structure fire to respond to in the Southwest Plan Area.

Fire protection in the Redevelopment Subareas is provided from Station 8 located adjacent to Subarea A on Burbank Avenue close to Sebastopol Road (830 Burbank Avenue). Fire units from other areas of the City also respond to emergency calls from Redevelopment Subareas A and B, but have extended response times. Station 8 is equipped with one engine company. Current average response times to the Redevelopment Subareas is from 4.93 minutes to 5.18 minutes. Although all emergency calls within all portions of the Redevelopment Subareas can be serviced, the Department currently lacks sufficient resources to provide a level of service commensurate with other areas of the City or within the City's response standards.

Schools

The Southwest Santa Rosa Plan Area is served by five individual school districts: Santa Rosa City High School District, Santa Rosa Elementary School District, Roseland Elementary School District, Bellevue Elementary School District, and Wright Elementary School District. The Santa Rosa City High School District and the Santa Rosa Elementary School District are run by the Santa Rosa City Schools. The Santa Rosa High School District provides Grades 7-12 education in the entire Southwest Plan Area. The Santa Rosa Elementary District, Roseland Elementary School District, and Bellevue Elementary School District provides Grades K-6 education in Redevelopment Subarea A. The Wright Elementary School District provides K-6 education

mostly in Redevelopment Subarea B although a small portion of Redevelopment Subarea A falls in its jurisdiction.

Roseland School District⁴

The Roseland School District currently operates two elementary schools - Roseland Elementary, and Sheppard Elementary. Almost half of Redevelopment Subarea A falls within this District. No new schools have been established in this District since preparation of the Southwest Area Plan EIR in 1994. The maximum possible capacity of both the schools is about 1200 and the current enrollment is 1120. The schools were near capacity in 1994 and until two years ago. However there has been a steady decline in enrollment since then, mostly because of the development of 2 new schools very close to Roseland School District's jurisdiction - Wright School District's R.L. Stevens Elementary School and Bellevue School District's Meadow View Elementary School. The Roseland School District's Open Enrollment Policy enables parents to place their school going children in the School district of their choice. The two new schools are also very close to newly developed multi-family apartment complexes.

Bellevue Union School District⁵

The Bellevue Union School District occupies the southern portion of Redevelopment Subarea A. It operates three schools, Bellevue Elementary School, Meadow View Elementary School, and Kawana Elementary School. The Meadow View Elementary School, 2655 South Dutton Avenue, off Hearn Avenue is only three years old. The capacity and the current enrolment of each of these schools is given in Table 3.1.4-1.

Wright School District⁶

The Wright School District operates three schools, Wright Elementary, J. X. Wilson School, and R. L. Stevens School. The three schools have a total capacity of 1,247. The Wright Elementary

Table 3.1.4-1
Capacity and Enrollment of Schools in Bellevue Union School District

	<u>Present Enrollment</u>	<u>Capacity</u>
Bellevue	566	650
Meadow View	404	510
Kawana	639	690

Source: Marty Roeder, Business Manager, Bellevue Union School District, telephone communication, February 16, 2000.

has a current enrollment of 376 students, J. X. Wilson has a current enrollment of 465 students, and R. L. Stevens has a current enrollment of 437. J. X. Wilson School and R. L. Stevens School are almost at capacity, while the Wright School is nearing capacity.

Santa Rosa Elementary School District⁷

This District serves the northeastern portion of Redevelopment Subarea A and currently operates eleven elementary schools. Only one school with majority attendance from the study area is covered by the District's jurisdiction, the Luther Burbank Elementary School. The current enrollment (February 2000) is 368 and the projected enrollment for year 2000 is 385 students. The Luther Burbank Elementary School is almost at capacity.

Santa Rosa High School District

The Santa Rosa High School District serves the entire Southwest Santa Rosa area. The district currently operates five middle schools, five comprehensive schools, and one alternative high school. Students from the Southwest Santa Rosa area are served by two of the District's schools, Elsie Allen High School, grades 9 to 12, and Lawrence Cook Middle School, grades 7 to 8. The Elsie Allen School is nearing capacity while the Lawrence Cook Middle School is over its capacity. The optimum capacity of these schools set by the District's Board, the current enrollment and projected enrollment for year 2000 is given in Table 3.1.4-2.

Table 3.1.4-2
Capacity and Enrollment of Schools in Santa Rosa High School District

	Capacity	Current Enrollment (February 2000)	Projected Enrollment (Year 2000)
Elsie Allen High School	1650	1334	1298
Lawrence Cook Middle School	850	871	881

Source: Linda Lynch, Secretary, Assistant Superintendent, Business, Santa Rosa City Schools, telephone communication, February 18, 2000.

Statutory Development Fee/Mitigation Fee⁸

The school districts in Santa Rosa collect two types of fees, Statutory Development Fee or Mitigation Fee. The Statutory Development Fee is the standard statutory fee enforceable by State Law. Some parcels of land, especially in Southwest Santa Rosa are undergoing land use changes and hence have a mutual benefit agreement or the mitigation fee agreement where the developer pays an extra amount above the statutory development fee to compensate for the change in the land use.

Santa Rosa City Schools which runs the Santa Rosa Elementary District and the Santa Rosa High School District collects the statutory development fee for Roseland School District and its own Districts. The Roseland School District receives a portion of the fee collected by the Santa Rosa City Schools. The Bellevue Elementary School District and the Wright School District splits the statutory development fee, 70 to 30 with the Santa Rosa City Schools. Table 3.1.4-3 shows the mitigation and the statutory development fees collected by the various school districts.

Parks and Recreation⁹

The City of Santa Rosa Parks and Recreation Department is responsible for the acquisition and maintenance of park land, and recreational facilities, as well as the maintenance of street medians and street trees. The General Plan policy [PSF -1b] sets forth City of Santa Rosa's park standard as 6 acres of park land per one thousand residents. Park land includes City parks, school recreational land, and open space.¹⁰

Development

**Table 3.1.4-3
Mitigation/Statutory Development Fees of the School Districts**

	Statutory Development fee/ square foot (R-residential, C-Commercial)	Mitigation fee/ square foot
Roseland Elementary	\$1.93 - R; \$0.31 - C (The statutory fee is collected by Santa Rosa City Schools and \$1.2 for R and \$0.19 for C per sq. ft is handed over to Roseland School District.)	\$3.89
Bellevue Elementary	\$1.93 - R; \$0.31 - C (70% of the statutory fees collected is handed over to the Santa Rosa City Schools.)	\$3.23
Wright Elementary	\$1.93 - R; \$0.31 - C (70% of the statutory fees collected is handed over to the Santa Rosa City Schools.)	\$2.68
Santa Rosa Elementary	\$1.93 - R; \$0.31 - C	\$1.96
Santa Rosa High	\$1.93 - R; \$0.31 - C	\$1.10

Source: Janene Benway, Senior Secretary, Fiscal Services, Santa Rosa City Schools; Les Crawford, Superintendent, Roseland School District; Marty Roeder, Business Manager, Bellevue Union School District; Michelle Murphy, Business Manager, Wright School District.

Total developed park area within City of Santa Rosa City limits is 447.75 acres and the undeveloped park area is 78.3 acres. The existing parks in the Southwest Plan Area include the 19 acre Southwest Community park at 1698 Hearn Avenue, the 1 acre South Davis Park at 712 South Davis, and 1 acre Cook School park at Lombardi and Gardener for a total of 21 acres of developed park area. The Southwest Area Plan provides for a total of about 294 acres of developed park area and open space at build-out. Out of this area, a proposed 88.15 acres falls within Redevelopment Subareas A and B.

The City's Recreation and Park Department charges Park Land Dedication In-lieu Fees and Park Development Fees for all residential development. These fees are collected while issuing the building permits. For large developments, sub-divisions of 50 units or larger, adequate lands can be provided as per specified formulas as park land dedication in the development proposals instead of the Park Land Dedication In-lieu Fees and Park Development Fees. The Park Land Dedication In-lieu fees and Park Development Fees for all types of dwelling units is given in Table 3.1.4-4.¹¹

Table 3.1.4-4
Park Land Dedication In-lieu fees and Park Development Fees

Type of Dwelling	Park Land Dedication In-lieu Fee/unit	Park Development Fee/ unit	Total Fee
SF Detached	1,428.00	1,428.00	2,856.00
SF Attached	1,223.25	1,223.25	2,446.50
Duplex	1,207.50	1,207.50	2,415.00
Multi-Family	1,050.00	1,050.00	2,100.00
Mobile Home	834.75	834.75	1,669.50

Source: Chuck Rust, Director, Recreation and Parks Department, City of Santa Rosa, facsimile to EIP Associates, February 22, 2000.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

A public service impact would be considered significant under the following conditions:

- **Police Services:** If development as assisted through the Redevelopment Plan would substantially increase security risks that would adversely affect human health or safety; or if the need for and subsequent provision and operation of additional resources or facilities would substantially affect the physical environment adversely.
- **Fire Services:** If development as assisted through the Redevelopment Plan would adversely and substantially affect human health or safety; or if the need for and subsequent provision and operation of additional resources or facilities would substantially affect the physical environment adversely.
- **Schools:** If development as assisted through the Redevelopment Plan would substantially increase the demand for schools the subsequent provision and operation of which would substantially affect the physical environment adversely.
- **Parks and Recreation Facilities:** If development as assisted through the Redevelopment Plan would substantially increase the need of parks and recreation facilities the subsequent provision and operation of which would substantially affect the physical environment adversely.

The public service impacts of this Redevelopment Plan, including the effects of stimulating development already anticipated in the Southwest Area Plan, are assessed based on these standards of significance. Impacts are assessed for the three major components of the

Redevelopment Plan: the Development Assistance Program, the Public Projects Program, and the Housing Program.

Development Assistance Program

The Development Assistance Program would finance land acquisition, deteriorated structure removal, site preparation, relocation assistance, hazardous materials remediation and the removal of concrete runways at the Air Center. The Development Assistance Program could generate impacts to public services through the stimulation of proposed development and construction activities, and/or the removal of impediments to proposed development and construction activities from infrastructural development. The impact analysis of these public service impacts is discussed under the Housing Program subsection because the Housing Program of the Redevelopment Plan would have the greatest effect on commercial and residential development of the three programs of the Redevelopment Plan.

Public Projects Program

The Public Projects Program is an infrastructure program and would provide for the construction of water, wastewater, road, and storm drainage facilities. It would increase utility (see section 3.1.5, *Utilities*) and public service capacity (roadways, possibly response times). The implementation or provision of the infrastructure services would accommodate development already anticipated in the Southwest Area Plan. Such development would in turn increase the demand for public services. Such public service impacts are assessed below under the Housing Program subsection.

Housing Program

The Housing program would provide assistance to build, improve and preserve low and moderate income housing. Such financing could generate impacts to public services through the stimulation of development as anticipated within the Southwest Plan Area more generally, and within Redevelopment Plan Subareas A or B in particular.

Police Protection

Impact 3.1.4-1

The Redevelopment Plan would stimulate residential development and associated commercial development in the Redevelopment Subareas A and B, and in the Southwest Plan Area more generally. The increased life safety risks through increased density and intensity of population would require additional police forces and thus would be a significant impact. (S)

The Santa Rosa Police Department provides police services in the City of Santa Rosa. The Redevelopment Plan would stimulate residential development and associated commercial development in Redevelopment Subareas A and B, and in the Southwest Plan Area more generally. This increased density of population and intensity of development in the Southwest Plan Area would increase life safety risks thus requiring additional police services.

Assuming a current Southwest Plan Area service population of about 14,500 and a resident population at build-out of 38,320, the net impact is an increased resident population of 23,820. To achieve the current preferred level of service of the Santa Rosa Police Department of 1.5 officers per 1,000 residents, an additional 36 officers would be required by the Department at build-out of the Southwest Area. An increase in sworn officers would also require the addition of patrol vehicles, support personnel, and expansion of headquarters. With development in Subareas A and B, a proportion of those resources would be required.

Mitigation Measure 3.1.4-1

— The City shall agree to fund the additional resources as requested by the Santa Rosa Police Department during the annual budget process over the buildout of Redevelopment Subareas A and B and the Southwest Plan Area more generally. The timing for providing these resources shall be keyed to population growth in the Southwest Plan Area, with the goal being to achieve the Department's current standard of 1.5 officers per 1,000 residents. This mitigation would reduce this impact to an insignificant level. (I)

— Mitigates: — Impact 3.1.4-1 (I)
— Implementation: — Key to population growth
— Responsibility: — City of Santa Rosa City Council
— Monitoring: — Department of Community Development

The City shall agree to monitor response times in the Redevelopment Area to assure that the level of police services coincides with the average response time citywide. Should the response times fall below the citywide average, adjustments will be made to staffing and/or the boundaries of the Neighborhood Oriented Policing Zones. (I)

Mitigates:	Impact 3.1.4-1 (I)
Implementation:	Response times affirmed annually in the budgeting process.
Responsibility:	City of Santa Rosa
Monitoring:	Police Department

Fire Protection

Impact 3.1.4-2

To achieve the standard response times and level of fire services in Redevelopment Subareas A and B, the existing station 8 would have to be relocated to a more central site and two more additional fire station sites would have to be developed. This would be a significant impact. (S)

Fire protection in the Redevelopment Subareas is provided from Station 8 located adjacent to Subarea A on Burbank Avenue close to Sebastopol Road (830 Burbank Avenue). Fire units from other areas of the City also respond to emergency calls from Redevelopment Subareas A and B, but have extended response times. Station 8 is equipped with one engine company. Current average response times to the Redevelopment Subareas is from 4.93 minutes to 5.18 minutes as noted previously, almost the same response time as in 1994 and much above the City's current average response times. The Santa Rosa Fire Department is presently unable to meet the City standard for fire department response time in any part of the Redevelopment Subareas. Between 17-36% of the emergencies received a response time in excess of six minutes. Although all emergency calls within all portions of the Redevelopment Subareas can be serviced, the Department currently lacks sufficient resources to provide a level of service commensurate with other areas of the City or within the City's response standards.

Relocation of the exiting Station 8 to a more central location would improve the service coverage and average response times in Redevelopment Subarea A. The Fire Department has proposed a site closer to Burbank Avenue and Hearn Avenue for relocation of station 8 which will improve response times in both the Redevelopment Subareas, but more specifically Redevelopment Subarea A.

The Santa Rosa Fire Department has proposed the development of two fire station sites owned by the Fire Department which would serve both Redevelopment Subareas. One of the sites at 1955 Northpoint Parkway near the Optical Coating Laboratories plant proposed for a fire station is an individual project proposed as part of the Southwest Area Plan (Project #34). The other site near

Petaluma Hill Road and Kawana Springs Road, on the east side of Highway 101, though not located within the actual Redevelopment Subareas, would be able to serve the emergency needs of the Redevelopment Subareas. At least one engine company and possibly a ladder truck company will be required at these two station sites to adequately serve the Redevelopment Subareas A and B.

Mitigation Measure 3.1.4-2

~~The City shall agree to fund the relocation of Station 8 from its current location to a site closer to Burbank Avenue and Hearn Avenue and the development of two new station sites, one at 1955 Northpoint Parkway and the other near Petaluma Hill Road and Kawana Springs Road during the annual budget process over the buildout of Redevelopment Subareas A and B and the Southwest Plan Area more generally. The timing for providing these resources shall be keyed to population growth in the Southwest Area, with the goal being to achieve the Department's current response standards for providing fire services. This mitigation would reduce this impact to an insignificant level. (I)~~

— Mitigates:	Impact 3.1.4-1 (I)
— Implementation:	Key to population growth
— Responsibility:	City of Santa Rosa City Council
— Monitoring:	Department of Community Development

The City shall agree to monitor response times in Redevelopment Subareas A and B to assure the level of fire services coincides with the average response time citywide. Relocation of Station 8 or other measures as appropriate will be prioritized and funded to assure response times are met. (I)

Mitigates:	Impact 3.1.4-2 (I)
Implementation:	Response times affirmed annually in the budgeting process.
Responsibility:	City of Santa Rosa
Monitoring:	Fire Department

Schools

Impact 3.1.4-3

Build-out of Redevelopment Subareas A and B would generate an estimated 1,059 new elementary school students, 265 new junior high school students, and 529 new senior high school students. This would be a significant impact. (S)

The number of proposed housing units in Redevelopment Subareas A and B is 2,847. About 200 of these units are already constructed resulting in 2,647 net new housing units. Using student generation factors of 0.4 students for K-6, 0.1 students for 7-8, and 0.2 students for 9-12 per unit

for both single- and multi-family dwelling units¹², the total number of new students generated in Redevelopment Subareas A and B would be:

- 1,059 elementary school students (K-6);
- 265 junior high school students (7-8); and
- 529 senior high school students (9-12).

The capacity/enrollment figures for the schools in the various school districts that serve the Redevelopment Subareas show that there is not sufficient capacity to handle build-out of Redevelopment Subareas A and B. Table 3.1.4-5 shows the capacity/enrollment figures of the various schools. Redevelopment build-out would generate 1,043 elementary school students but the current capacity of the elementary schools would accommodate approximately only 320 students. The elementary schools do have short term capacity. However over the build-out period of the Redevelopment Subareas, all the elementary school districts serving the study area would require the development of new school facilities. Currently the only middle school, Lawrence Cook Middle School serving the Redevelopment Subareas is over capacity and there is an immediate need to generate additional capacity of middle schools. The only high school in the study area, Elsie Allen High School has a capacity for only 316 students and can accommodate immediate demands. However, alternate arrangements would have to be made to accommodate the Redevelopment Subareas build-out demand of 521 high school students.

All school districts in the Redevelopment Subareas would require the development of new school facilities to accommodate the projected increases in school enrollments at all age levels over buildout of the Redevelopment Subareas in particular and the Southwest Area Plan generally. The school districts usually adopt a range of methods to provide for increased student enrollment. These methods may include the addition of portable classroom units, the partial development of new school facilities (i.e. the building of half of an additional school with completion as required), or the full development of new school facilities.

There are no new schools immediately proposed by the Roseland School District. The Roseland School District does not have sufficient demand at present for schools to justify a new school. However, the expected demand due to the build-out of the Southwest Area Plan has been taken

into account and a concept for an elementary school is taking shape. A 10 to 12 acre farm, Imawle Garden, north of State Highway 12 is being considered as a possible site for an elementary school.

The schools of the Bellevue Union School District are not overcrowded yet but Kawana Elementary School, the only school in the District's jurisdiction east of Highway 101 is fast reaching its capacity. A site east of Highway 101 has been proposed for the establishment of an elementary school with a capacity of 510 students. A proposal has been submitted to the City

Table 3.1.4-5
Available Capacities at Various Schools and Projected Demand

	Capacity	Current Enrollment	Available Capacity	Projected Demand
Sheppard and Roseland	1200	1120	80	
Bellevue	650	566	84	
Meadow View	510	404	106	
Kawana	690	639	51	
Wright, J X Wilson, and R L Stevens	1247	1265*	-18	
Luther Burbank	385	368	17	
Elementary Schools Total	4682	4362	320	1,059
Lawrence Cook Middle School	850	871	-21	265
Elsie Allen High School	1650	1334	316	529

Note: * The individual enrollment figures for the three schools are 380 for the Wright school, 415 for J X Wilson, and 470 for R L Stevens.

Linda Lynch, Secretary, Business Services, Santa Rosa City Schools; Les Crawford, Superintendent, Roseland School District; Marty Roeder, Business Manager, Bellevue Union School District; Lou Becker, Superintendent, Wright School District.

for a General Plan Amendment and to the State of California for justification of the site. The increase in demand for schools is usually in stages and so the proposed school will be built in two phases so that the supply will match the demand. Although all of Redevelopment Subarea A is west of Highway 101, the establishment of a school in the jurisdiction will indirectly satisfy demands generated due to implementation of the Redevelopment Plan.

The Wright School District has no immediate proposal for a school although two schools of not greater than 520 capacity each are being planned for in the future. The first school may be developed in 3-5 years and the second school in 7 years.

The Santa Rosa Elementary School District has no current proposal for any schools although a school would be planned and developed if the need arises.

Santa Rosa High School District currently has no proposed schools although initial research is currently being conducted for a possible new middle school within the District.

Mitigation Measure 3.1.4-3

Prior to the issuance of building permits, the City shall require proof of payment of the statutory development fee or the mitigation fee imposed by the school districts that serve the Redevelopment Subareas, as authorized by State law, consistent with Policy PSF-3a, Page 107 of the City of Santa Rosa General Plan.¹³ The impacted school districts should use these funds to provide adequate school facilities to meet the needs of the additional school district enrollments to reduce school impacts to an insignificant level. (I)

Mitigates:	Impact 3.1.4-3 (I)
Implementation:	Key to population growth Proof of payment.
Responsibility:	Board of Education of the respective school districts, City of Santa Rosa, Department of Community Development.
Monitoring:	Department of Community Development

Parks and Recreation

Impact 3.1.4-4

The buildout of Redevelopment Subareas A and B would require the development of 46 acres of park land or accessible open space and build-out of the Southwest Area Plan would require the development and maintenance of a total of 230 acres of park land or accessible open space. This would be a significant impact. (S)

The General Plan policy [PSF -1b] sets forth City of Santa Rosa's park standard as 6 acres of park land per one thousand residents. Park land includes City parks, school recreational land, and open space.¹⁴ The total number of proposed residential units at build-out of the Redevelopment Subareas A and B is 2,847. Using a population factor of 2.693 for a medium density build-out population of 7,667, forty-six acres of park land or accessible open space would

be required to be developed or accommodated in the Redevelopment Subareas A and B. The proposed area reserved for parks and open spaces in the various projects of the Redevelopment Subareas A and B amounts to 88.15 acres. Considering the build-out residential population of 38,320 persons in the Southwest Plan Area, in order to meet the parks standard of 6 acres per 1,000 population a total of 230 acres of park land or accessible open space would be required. The Southwest Area Plan provides for 14 new neighborhood parks at approximately 7 acres each, and one new 25-acre community park, for a total of 123 new park acres. Including the existing 19-acre Southwest Community Park, the 1-acre South Davis Street Neighborhood Park, and the 1-acre Cook School park, the Southwest Area Plan indicates a total of 144 developed park acres. In addition, the Plan provides for 150 acres of designated open space, which accounts to a total of 294 acres of park area that would meet the park standards.

Mitigation Measure 3.1.4-4

Prior to issuance of a building permit the City shall require that each current or future project sponsor in the Southwest Plan Area provide adequate park land dedication in their project proposals or pay the in-lieu Land Dedication Fees and the Park Development Fees. This would reduce this impact to an insignificant level. (I)

Mitigates:	Impact 3.1.4-3 4(I)
Implementation:	Key to population growth The dedication of land for park use or payment of in-lieu Land Dedication Fees and Park Development Fees.
Responsibility:	City of Santa Rosa Department of Community Development in Collaboration with the Parks and Recreation Department. City Council
Monitoring:	Department of Community Development

Notes - Public Services

1. Stephen Thomas, Santa Rosa Police Department, electronic mail to EIP Associates, December 3, 1999.
2. Douglas G. Newton, Sergeant, Sheriff's Department, County of Sonoma, letter to EIP Associates, December 16, 1999.
3. Unless otherwise noted, information contained in this subsection from: Deputy Fire Chief Bart Lewis, Santa Rosa Fire Department, facsimile communication to EIP Associates, December 9, 1999.
4. Les Crawford, Superintendent, Roseland School District, telephone communication, February 16, 2000.

3. Environmental Setting, Impacts and Mitigation Measures
3.1.4 Public Services

5. Marty Roeder, Business Manager, Bellevue Union School District, telephone communication, February 16th 2000.
6. Michelle Murphy, Business Manager, Wright School District, telephone communication, February 22, 2000; Lou Becker, Superintendent, Wright School District, telephone communication, February 23, 2000.
7. Linda Lynch, Secretary, Assistant Superintendent, Business, Santa Rosa City Schools, telephonic conversation with EIP Associates, February 18, 2000.
8. Janene Benway, Senior Secretary, Fiscal Services, Santa Rosa City Schools, telephone communication, February 17, 2000.
9. Unless otherwise noted, information contained in this section is from Chuck Rust, Director, Santa Rosa Recreation and Parks Department, facsimile to EIP Associates, December 10, 1999.
10. City of Santa Rosa Department of Community Development, Vision 2020 - The Santa Rosa General Plan, July 23, 1996, p. 120.
11. Chuck Rust, Director, Recreation and Parks Department, City of Santa Rosa, telephone communication, February 22, 2000.
12. Robin Goldsworthy, Consultant, Jack Schreder & Associates, telephone communication, February 17, 2000.
13. City of Santa Rosa Department of Community Development, Vision 2020 - The Santa Rosa General Plan, July 23, 1996, p. 107.
14. City of Santa Rosa Department of Community Development, Vision 2020 - The Santa Rosa General Plan, July 23, 1996, p. 120.

3.1.5 UTILITIES

INTRODUCTION

This section of the SEIR addresses the impacts of the proposed Redevelopment Plan on utility services, including the Plan's Development Assistance Program, the Public Projects Program, and the Housing Program. Information from the Southwest Santa Rosa Area Plan Final Environmental Impact Report (FEIR, March 1994) is hereby incorporated by reference, and summarized and updated as pertinent. Utility services discussed in this section include water supply and distribution, wastewater collection and treatment, and solid waste disposal. Impacts regarding storm drainage is discussed in Section 3.2.2, *Hydrology and Water Quality*. Pacific Gas and Electric Company is obligated through the California Public Utilities Commission to provide electricity and natural gas.

The development of the Southwest Plan Area -- including the area covered by the Redevelopment Plan Subareas A and B -- has been anticipated by the Santa Rosa Utilities Department and is reflected in the City's water and wastewater master plans, both of which assume growth scenarios that include the entire area within the Urban Boundary. Development would be expected to be predominately the same as that already anticipated in the Southwest Area Plan.

The economic impacts of a proposed project on utility service providers (need for new or larger transmission or collection lines, or treatment plants or other facilities) would be met as it has in the past -- through separate conditions of water and sewer service provision and the payment of one-time hook-up fees to meet the project's share of existing or future facility capital costs and its share of on and off-site improvements. Water and sewer service providers are legally empowered to fully recover the costs of service provisions.

SETTING

Water Supply and Distribution¹

The City of Santa Rosa supplies a major portion of the water to the City with water purchased from the Sonoma County Water Agency (SCWA). The City's agreement with the ~~Agency~~ SCWA allows for a total maximum monthly ~~delivery withdrawal~~ rate of 50 million gallons per day (mgd). The City's current average daily demand is 21 mgd, or 42% of its maximum daily

delivery entitlement, compared to the 1992 average daily demand of 18.3 mgd or 37% of maximum daily delivery entitlement.² According to the City of Santa Rosa Utilities Department, (1999 Production and Use Statistics), the average daily demand for the peak months of June, July, August and September 1999 was 28.4 mgd, 30.9 mgd, 29.9 mgd and 25.7 mgd. respectively. The City has a groundwater supply consisting of 6 wells compared to 3 wells in 1993 for emergency use. However the excess Ferrous (Fe) and Manganese (Mn) concentrations in the ground water and the taste and odor problems makes the water from the wells unfit for regular potable use unless the water is treated.

In contrast to conditions present during the preparation of the Southwest Area Plan EIR in 1994, the SCWA has been finding it increasingly difficult to satisfy the demands of its users during the peak months (June, July, August, and September) of water use in recent years (July and August, with July 15 through August 15 typically being the Peak 30-day period). The SCWA's customers other than the City of Santa Rosa include the cities of Petaluma, Rohnert Park, Cotati, and Sonoma; and Novato; The Forestville, Valley of the Moon, and North Marin Water District; and the communities of Larkfield, Kenwood, Windsor Forestville, and Penngrove. on a less frequent basis Windsor and Southern Marin County, and the Citizens Utilities Company of California Larkfield District, Kenwood Water Company, Penngrove Water Company, and Lawndale Mutual Water Company. In addition, the District SCWA sells water wholesale to the Marin Municipal Water District. With the recent listing of two three endangered species, Coho and Chinook salmon and Steelhead Trout in the Russian River, the SCWA is not able to increase the rate of withdrawal from the Russian River to satisfy increasing demands of its users without first going through completing a Section 7 Consultation, the U.S. Fish and Wildlife Services' (USFWS) endangered species assessment. in cooperation with the National Marine Fisheries Service and U.S. Army Corps. of Engineers. The Agency SCWA is presently engaged in a Section 7 Consultation with the USFWS these two entities.

The Agency SCWA is currently permitted to withdraw divert/redirect up to 75,000 acre feet (AF) per year from the Russian River its sources and it currently delivers about 60,000 acre-feet of water to its customers annually. up from 56,000 acre-feet in 1998. Officials of the SCWA have projected determined that the it's current delivery reliable production capacity of 84 mgd will be

all the water that will be available out of the Russian River until Collector No. 6 is constructed and operational. Additional water supply capacity needed to meet future demands identified in the SCWA's Water Supply and Transmission System Project (WSTSP) cannot be constructed until the lawsuit on the WSTSP EIR and the Section 7 Consultant are resolved. ~~lawsuit against the Agency's Water Supply EIR is resolved and the Section 7 Consultation is completed.~~ If the resolutions support the ~~Agency's~~ SCWA's proposed water supply plan, ~~then~~ it could still be up to 10 years before additional water beyond the present allocations would be available to the SCWA system and buildout under the subregion's present general plans could be accommodated. Ultimately, the next round of general plan updates will need to grapple with water supply as a potential constraint to development. If the resolutions to the lawsuit and Section 7 Consultation do not support the ~~Agency's~~ SCWA's proposed water supply plan, then it may be difficult ultimately to increase water supply much beyond current authorized capacity. In this scenario, water supply would become a constraint on development within the next ten years for the SCWA's water contractors. subregion. The responses that such a constraint would play ~~would~~ could range from increasing storage capacity to meet peak demand, to moderate to aggressive to radical water conservation measures for existing and new development, to growth control managed to fit the water supply.

Current water supply capacity is adequate to meet demand most of the year, but is strained to capacity during the peak summer months of June, July, ~~and~~ August, and September. ~~the peak-use 30-day period from July 15 to August 15.~~ The current system-wide demand from all of the SCWA users during the peak months can go up to ~~110~~ 93 mgd, an overage of 38% ~~approximately~~ 11% over the maximum daily delivery capacity of 84 mgd. Such peak demand draws down the supply of stored water in the SCWA system intended to meet peak demand. ~~Thus, the month or two of peak demand annually illuminates a current system-wide storage problem, not a deficiency in the absolute quantity of available water supply annually relative to existing demand and development.~~

As mentioned above, the ~~Agency's~~ SCWA's water ~~delivery and~~ production capacity has been temporarily impaired by regulatory constraints and litigation that has delayed the construction of Collector No. 6 and other planned water supply and transmission system facilities. As a result

of this temporary impairment, the reliable water ~~delivery and~~ production capacity of the ~~Agency's~~ SCWA's water transmission system is currently limited to 84 mgd, 8 mgd below the 92 mgd authorized in the current water supply agreement between the ~~Agency~~ SCWA and its water contractors and required to meet contract commitments. To address this current, ~~and potentially~~ temporary water supply constraint, the Board of Directors has authorized ~~Agency~~ SCWA staff to negotiate with its water contractors and customers to develop ~~a consensual solution~~ consensus regarding the appropriate allocation of current capacity and local responses. Local responses can range from constructing more storage capacity, developing additional local supply such as groundwater wells, to expanding recycling efforts and water conservation measures. These negotiations are expected to conclude in June 2000.

Due to the uncertainty over future water supply from the SCWA, both in the ~~medium term of the~~ next 5-10 years, as well as longer term, the City of Santa Rosa has begun its own assessment to develop plans to meet short and long term conditions. The City has not completed its assessment yet, but its current estimate of water demand for a population of 180,000 residents expected in 2010 is between 33.5 and 34.5 mgd, an increase of approximately 62% over its current daily usage of 21 mgd, but well within its 50 mgd maximum daily delivery entitlement. The population projection includes the development anticipated for the Southwest Plan Area. The projection of 180,000 residents is consistent with ABAG's Projection's 2000 forecast of a total population of 181,900 people by 2010 within the City's sphere of influence. The City's current study will develop a more accurate current estimate of future water needs that will also consider the City's aggressive water conservation practices initiated in 1994.

As a result of recent changes in the conditions of the City's current and long-term water supply, the City of Santa Rosa has concluded that it cannot depend on the SCWA to satisfy all of its future water requirements. This stands in contrast to the apparent sufficiency of short-term and long-term water supply conditions at the time that the Southwest Area Plan EIR was prepared. Thus, the City feels that it must find alternative sources of water. In response, the City is in the midst of developing an Interim Water Plan to address the matter, with short-term actions anticipated as follows:

1. Bringing 2 of the City's existing but unused 6-7 wells back into use by May 2000 with well head treatment systems and an anticipated capacity of 2 mgd.
2. Developing 2 more new wells by May 2001 with an anticipated capacity of 2 mgd.
3. Increasing storage capacity to meet peak water needs to supplement the daily capacity of the SCWA delivery system. The City owns one reservoir site which has been used in the past, but not over the past 10 years. It can hold 10 million gallons. The City is considering use of this site and others.

The City of Santa Rosa owns and operates the water distribution system within the City's Urban Boundary including Redevelopment Subareas A and B. Water supply in the Redevelopment Subareas now comes from either the City's water distribution system, small community water companies, or private groundwater wells. However, a more extensive supply and distribution system would be required for buildout of the Southwest Plan Area as described in the Plan. The 24-inch Petaluma Aqueduct, which runs north-south parallel to the Northwestern Pacific Railroad tracks to the west of Highway 101, and the 36-inch West Santa Rosa Transmission Main, which enters the Southwest Area from the west, are the primary distribution sources for public water to the Southwest Area. The City of Santa Rosa Utilities Department still encourages water conservation through an aggressive water conservation program initiated in 1994.

Most of the Southwest Area Plan's water infrastructure programs have not been implemented yet. Only the Water Infrastructure Program on Stony Point Road from Lazzini Avenue to Marble Street has been constructed. The Water Aqueduct Intertie from Sebastopol Road to Hearn Avenue is still under construction. The Infrastructure project on Sebastopol Road East is scheduled for construction during the summer of year 2000. The water infrastructure improvements anticipated in the Redevelopment Plan for Redevelopment Subareas A and B include those listed are the same as those included in the Southwest Area Plan and EIR (see Appendix A of this document).

Wastewater Collection and Treatment³

Wastewater from the City of Santa Rosa, including that from Redevelopment Subareas A and B, is treated at the Laguna Wastewater Treatment Plant (LWWTP). The LWWTP serves a sub-regional area which includes the communities of Santa Rosa, Rohnert Park, Cotati, Sebastopol and part of the unincorporated county (South Park Sanitary District). The current treatment

capacity of the Laguna Treatment Plant is the same as it was in 1994 i.e., 18 mgd average dry weather flow (ADWF). The City plans to expand the plant capacity to 21.2 mgd by year 2002, an 18% increase. This additional capacity will serve build-out in the sub-regional area anticipated in the current General Plan (including the Southwest Area Plan). The City has no plans, nor does the City see the need, to expand the plant capacity further to 25 mgd as mentioned in the Southwest Area Plan EIR. However, in the event of an amendment to any of the applicable General Plans that would lead to increased development and ADWF, the Treatment Plant could be expanded. The current sub-regional average dry weather flow (ADWF) to the plant is 17.1 mgd as opposed to 16.5 mgd at the time of preparation of the Southwest Area Plan EIR, an increase of 4%. The City of Santa Rosa is generating about 11.7 mgd or 68% of the sub-regional service area's wastewater flow. The surplus capacity of the Laguna Treatment Plant is 0.9 mgd, and will be 4.1 mgd upon completion of the expansion. The anticipated increase of ADWF to the Laguna Treatment Plant from all its users in 2010 is 21.2 mgd in total and 15.2 mgd from the City of Santa Rosa alone.

Public wastewater collection and treatment in the Southwest Plan Area is provided by the City of Santa Rosa, with collection services also provided by the Sonoma County South Park Sanitation District. Public wastewater collection services currently cover approximately 50% of the Redevelopment Subareas A and B. The remaining area uses on-site sewage disposal systems. Subareas A and B are covered by four tributary areas: The Llano Trunk Tributary Area, the Airport Interceptor Tributary Area, the Hearn Trunk Tributary Area, and the Robles Trunk Tributary Area (see Figure 2-6). The proposed Todd trunk has not been implemented yet. However the Todd Trunk tributary area does not cover the Redevelopment Area.

Solid Waste Disposal⁴

The City of Santa Rosa contracts with Sonoma County to dispose of its solid waste. The City disposes its solid waste, including that from Redevelopment Areas A and B, at the Central Landfill at Mecham Road in Petaluma, which is owned and operated by the County. The solid waste is collected by the Empire Disposal Corporation through a franchise agreement with the City.

The City of Santa Rosa is within the jurisdiction of the Sonoma County Waste Management Agency. The Agency submitted an Integrated Waste Management Plan that was approved in 1994. According to the Integrated Waste Management Plan the Agency follows AB 939 and AB 1327 and develops solid waste diversion, recycling of wastes and other waste reduction policies in its jurisdiction.

The current waste stream into the Central Landfill averages 1,300 tons per day or 475,000 tons per year. The daily rate of disposal has been reduced by 200 tons since 1992 due to an increasing diversion of recyclable materials. The County estimates that it currently achieves a 39% diversion rate as opposed to 22% at the time the Southwest Area Plan EIR was prepared. The City's current diversion rate is lower than the State's goal of 50%. However, the Central Landfill is slated to reach capacity by about 2005 as was projected in 1993. The Central Landfill can accommodate about 2.4 million tons of solid waste until 2005. The County has planned for expansion of the Landfill capacity by 10 years, through the year 2015. An EIR for the expansion is being prepared. The City of Santa Rosa's contribution is about one-third of the total waste stream into the landfill. The implementation of the Southwest Area Plan projects has been taken into consideration while calculating the future capacity of the landfill.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

Utilities impacts would be considered significant if any of the following would be true:

- **Water:** Serving new development at accepted service levels as assisted through the Redevelopment Plan would require substantial improvements to water supply, treatment, or distribution facilities; serving the area under current resources would reduce services to the existing public below accepted or current standards; the construction or operation of planned facilities would adversely affect the physical environment; or, if a proposed project would use water wastefully through decorative water features or by not using standard efficiency methods for water conservation, such as low-flow plumbing fixtures.
- **Wastewater:** Serving new development as assisted through the Redevelopment Plan would require substantial improvements to wastewater collection or treatment facilities, the construction or operation of which would adversely affect the physical environment; serving the area under current resources would reduce services to the existing public below accepted or current standards.

- **Solid Waste:** If new development as assisted through the Redevelopment Plan would substantially increase solid waste flows beyond planned levels and thereby substantially hasten the need for a new landfill facility, the construction or operation of which would have its own potentially significant environmental impacts, or if a project would wastefully use solid waste disposal resources by not participating in available recycling programs for construction debris and operational waste.

As noted previously, (refer to the *Introduction* section of this SEIR), impacts in this SEIR are projected to the year 2010 consistent with the buildout assumptions contained in the Southwest Area Plan.

Development Assistance Program

The Development Assistance Program provides redevelopment financing for land acquisition, deteriorated structure removal, site preparation, relocation assistance, hazardous materials remediation and the removal of concrete runways at the Air Center. Therefore, the Development Assistance Program could stimulate development as anticipated under the Southwest Area Plan and/or the removal of impediments to development. As a result, the Redevelopment Plan could create potential utilities impacts. Because the Housing Program would also have the same potential impacts, but more extensively, the impacts of the Development Assistance Program are included in the discussion under the Housing Program subsection below.

Public Projects Program

The Public Projects program would provide for the construction of water, wastewater, road, and storm drainage facilities as envisioned under the Southwest Area Plan. The Program would not directly increase the demand for utility services by stimulating development and/or the removal of impediments to development beyond that envisioned in the Southwest Area Plan, but would enhance the transmission or collection capacity of water and wastewater services. Such infrastructural development is required by and would accommodate development anticipated in the Southwest Area Plan. The Public Projects Program of the Redevelopment Plan may have an effect on the rate of implementation of utilities services. Because the Housing Program would also have the same potential impacts, but more extensively, these impacts of the Public Projects Program are discussed under the Housing Program subsection below.

Housing Program

The Housing program provides assistance to build, improve and preserve low and moderate income housing. Redevelopment financing for these activities could accelerate the demand for utility services through the stimulation of residential, and in turn, commercial, development within Redevelopment Subareas A or B, potentially extending through the Southwest Plan Area as a whole. Of the utility services assessed in the 1994 Southwest Area Plan EIR, conditions have changed sufficiently regarding water and solid waste services such that the Redevelopment Plan and cumulative development anticipated for the Southwest Plan Area in its entirety, may create impacts different from those identified in the 1994 EIR. As a result, these potential impacts are assessed below. It should be noted that conditions regarding wastewater services to the Southwest Plan Area have not appreciably changed from those addressed in the 1994 EIR. It was noted that the primary need in the Southwest Area is to provide service to those areas that do not have adequate infrastructure in place, but sufficient capacity does exist via the main trunk lines and the expanded treatment plant to accommodate buildout of the area.

Average Annual Water Supply and Distribution

Impact 3.1.5-1

Water use associated with the development anticipated under the Redevelopment Plan would amount to approximately 1.1 mgd, or 16% of the 6.7 mgd anticipated with buildout of the Southwest Plan Area. This would be a 5% increase over the City's current use of 21 mgd, and 28% of the additional 4 mgd that the City anticipates developing by May 2001. Although the additional water demand is well within the City's entitlement of 50 mgd from the SCWA and that it could be met with the City's own anticipated supply, the additional water demand would exacerbate the more regional constraint to water supply the SCWA is experiencing through regulatory constraints and litigation, and the impact would be potentially significant. (PS)

The City of Santa Rosa currently uses 21 mgd on an average day and over 30 mgd on Average in the peak month ~~a peak day~~ from the SCWA. The estimated average water demand from the City of Santa Rosa for the year 2010 would be approximately 34 mgd. This total includes about 6.7 mgd from development anticipated for the Southwest Plan Area including Redevelopment Subareas A and B. The City would still be within its entitlement of 50 mgd. Taking into account the short and long run water supply and delivery constraints facing the SCWA and its customers, an increase in demand above the current average demand of 21 mgd and peak day demand of 30 mgd for the City of Santa Rosa may aggravate the City's capacity to meet its demand. In terms

of new development within Subareas A and B that may be stimulated by the Redevelopment Plan, short-term water supply augmentation plans (new wells for an additional 4 mgd by May 2001, plus reservoir storage), anticipated by the City would be sufficient to meet its need.

Table 3.1.5-1 illustrates estimated water use by development anticipated under the Redevelopment Plan for a total of 1.1 mgd average use. Thus, the Redevelopment Plan's consumption of 1.1 mgd would be 16% of the 6.7 mgd water demand anticipated with buildout of the entire Southwest Area Plan. This would be a 5% increase over the City's current use of 21 mgd, and 28% of the additional 4 mgd that the City anticipates developing by May 2001.

TABLE 3.1.5-1

	Housing Units	Commercial Space (sf)
Southwest Area Plan (SWAP)	14,229	7,937,400
Redevelopment Plan (RDP)	2,847	210,200
RDP's share of SWAP	20%	3%
SWAP Water Demand	5.4 mgd	1.02 mgd
RDP's Water Demand	1.07 mgd	0.03 mgd

Source: Southwest Area Plan EIR, Table 3.1.6-1 for water use; Project Description of this SEIR for development parameters.

Mitigation Measure 3.1.5-1

Given the more regional constraint to water supply the Sonoma County Water Agency is experiencing through regulatory constraints and litigation that are delaying planned water supply and transmission system facilities, the City of Santa Rosa shall continue to develop alternative sources of water and storage/conveyance facilities, including reactivating unused wells, developing new wells, and increasing storage capacity to meet peak water needs. The City will also consider the use of reclaimed water to offset the use of potable water in its long-term planning. In addition, the Santa Rosa Utilities Department will continue to encourage water conservation and the use of water conserving devices. (I)

It is noted that the City of Santa Rosa is preparing an Interim Water Supply Plan ~~do to~~ to deal with the issue of both short and long term water supply. The water supply options focus on the development of wells and the use of reclaimed water to offset the use of potable water. In addition ~~to the Sonoma County Water Agency is~~ investigating Russian River withdrawal options

for a long term water supply the SCWA is also investigating plan, including the use of reclaimed recycled water to offset potable water use. Implementation of conservation measures, and additional water storage are key components of the SCWA's water supply plan. geared to increasing the overall water supply.⁵

Mitigates:	Impact 3.1.5-1 (I)
Implementation:	Ongoing
Responsibility:	City of Santa Rosa, Utilities Department
Monitoring:	Santa Rosa Department of Community Development City of Santa Rosa, Utilities Department

Solid Waste

Impact 3.1.5-2

Development of the Southwest Plan Area, inclusive of Redevelopment Subareas A and B, would be expected to increase the solid waste stream to the Sonoma County Central Landfill by 22,100 tons per year. This would be a 4.6% increase over the current waste stream to the landfill. This would be an insignificant impact. (I)

The increased demand for service from increased population in the Southwest Area is within the growth anticipated by the County in estimating future solid waste generation in its service area. Actions have been taken to assure that uninterrupted land fill service will be available beyond the 2010 buildout date anticipated in the Southwest Area Plan.⁶

Mitigation Measure 3.1.5-2

No mitigation measure is specifically required. Development in the Southwest Plan Area will be responsible for complying with ordinances enacted by the City of Santa Rosa to achieve the goals mandated by AB 939 and the requirements of AB 1327. (I)

Notes - Utilities

1. Unless otherwise noted, information contained in this section is from Larry Brown, Deputy Director, Utilities Administration, City of Santa Rosa, communication with EIP Associates, facsimile of December 17 and phone conversation of December 21, 1999 for the City of Santa Rosa; or Randy D. Poole, P.E., General Manager/Chief Engineer, Sonoma County Water Agency, Letter of December 29, 1999 to Binu Chandy, Environmental Engineer, EIP Associates, for the Sonoma County Water Agency.
2. Op. Cit., Larry Brown. Average daily demand is the simple 12 month average of the reported monthly Average Daily Water Use. The 1992 figures are from the Southwest Area Plan EIR.

3. Unless otherwise noted, information contained in this section is from Larry Brown, Deputy Director, Utilities Administration, City of Santa Rosa, communication with EIP Associates, facsimile of December 17 and phone conversation of December 21, 1999.
4. Unless otherwise noted, information contained in this section is from Ken Wells, Integrated Waste Manager, Sonoma County Department of Public Works, telephone conversation with EIP Associates, December 2, 1999.
5. Dave Richardson, CH2MHill Consultants, telephone communications, February 25 and 28, 2000.
6. The Southwest Area Plan was developed using General Plan 2010 as a guide. Therefore, such assumptions as the number of dwelling units, percentages of single and multiple family dwellings, and the time frame of the Area Plan are the same as those for General Plan 2010. It is assumed that the Southwest Area Plan will be reviewed periodically, like the General Plan, to evaluate changes in market conditions and community objectives. For additional information, refer to page 11 of the Area Plan.

3.1.6 VISUAL QUALITY AND COMMUNITY CHARACTER

SETTING

The Southwest Plan Area is visually diverse because of the mixture of open spaces and developed areas that currently exist there. There are open undeveloped lands with single family residences and appurtenant structures at scattered locations. There are also recently constructed residential neighborhoods and business parks at various locations mixed with older residences and buildings symbolic of past agricultural activities that existed in the area. Housing construction at several locations is currently underway. Contemporary architecture is mixed with building styles extending back to the early 1900s. Industrial uses are mixed with commercial development.

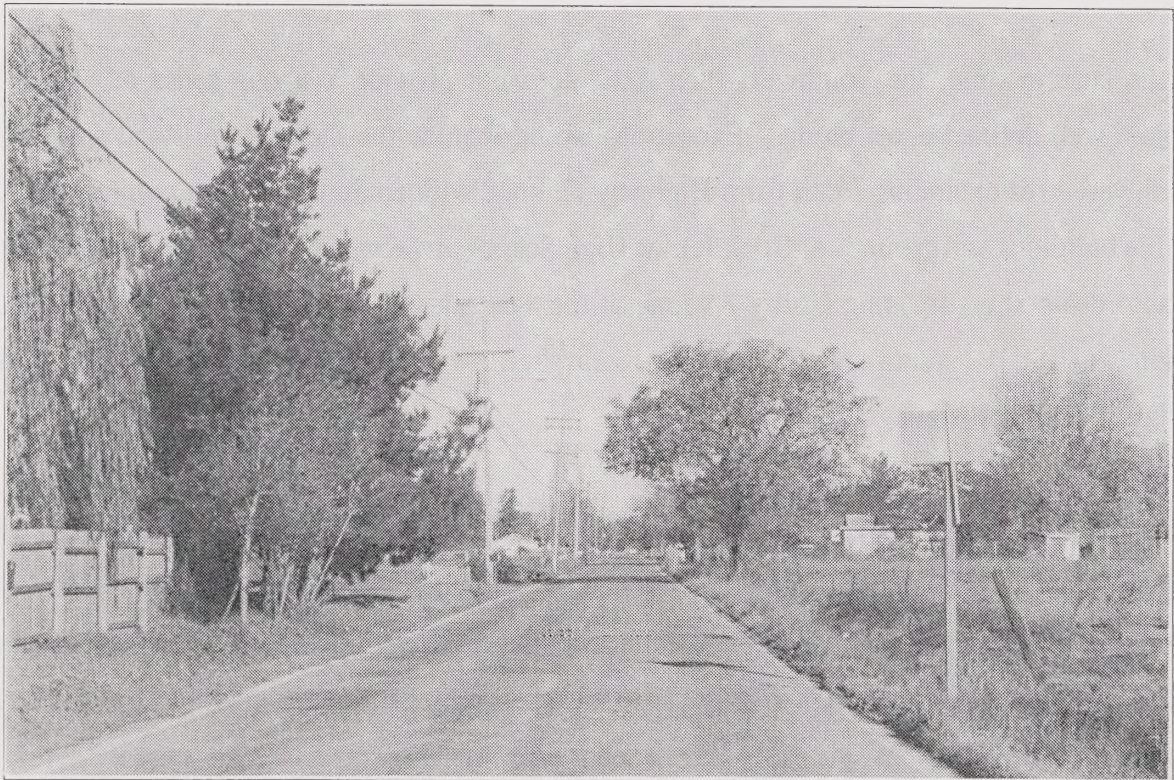
The land within and adjacent to the Southwest Plan Area is essentially flat, and where development does not predominate, long-range views across the landscape to outlying areas are available. Street trees associated with development and existing oaks in more open spaces add to the visual variation of diverse development mixed with open space patterns to be seen in the Southwest Plan Area.

At the current time, the Southwest Plan Area does not provide a strong sense of “place” or contain well defined entry points. Exceptions would include the Stony Point Road entry to the Southwest Area extending south from Highway 12 lined with commercial development, the low-profile buildings and grounds of Cook Junior High School on Sebastopol Road, and extensive row of auto dealerships fronting Corby Avenue at the east margin of the Plan Area that is clearly visible to U.S. 101 motorists. These areas retain their own visual significance through building design, layout and signage.

Figures 3.1.6-1 through 3.1.6-3 illustrate existing visual conditions with the Southwest Plan Area, inclusive of Redevelopment Subareas A and B. Figure 3.1.6-1A is a view east along reconstructed Hearn Avenue at West Avenue in Redevelopment Subarea A. The neighborhood is an established neighborhood and long-range views encompass the rolling hillsides of the Taylor Mountain area south of the City limits and east of U.S. 101. The reconstruction of



A. VIEW EAST ALONG RECONSTRUCTED HEARN AVE. AT WEST AVE. (REDEVELOPMENT SUBAREA A)



B. VIEW NORTH ALONG SOUTH WRIGHT ROAD. (REDEVELOPMENT SUBAREA B)

12 29 99

SOURCE: EIP Associates



A. VIEW WEST ALONG LUDWIG AVE. (REDEVELOPMENT SUBAREA B)



B. VIEW NORTH AT MERCED AVE. AND MILES AVE. (REDEVELOPMENT SUBAREA B)

SOURCE: EIP Associates



A. VIEW WEST FROM SOUTH WRIGHT ROAD (WEST OF REDEVELOPMENT SUBAREA B)



B. VIEW WEST ALONG DEBBIE DR. AT DUTTON AVE. (REDEVELOPMENT SUBAREA A)

12.29.99

SOURCE: EIP Associates

Hearn Avenue from Stony Point Road to Dutton Avenue has provided for new pavement and a wider roadway surface. The reconstructed portion of Hearn Avenue also includes curbs and sidewalks where none existed before. Residences front the roadway closely, characteristic of urban residential development. In contrast, Figure 3.1.6-1B is a view north along South Wright Road in Redevelopment Subarea B. Here the road consists of two lanes and there are no sidewalks, curbs or bike trails. The vegetation extends to meet the edge of the roadway surface and coupled with the lack of development in the immediate field of view, the visual impression is one of a semi-rural landscape.

Figure 3.1.6-2A is a view west along Ludwig Avenue in Redevelopment Subarea B. This area retains a semi-rural visual characteristic as described for the view in Figure 3.1.6-1B. Similarly, the view north at Merced Avenue and Miles Avenue in Redevelopment Subarea B as shown in Figure 3.1.6-2A is semi-rural in character. This condition predominates in the south and west portions of the Southwest Plan Area with more intense and urbanized development existing as one moves into the more northerly and easterly portions of the Plan Area.

Figure 3.1.6-3A is a view west from South Wright road into undeveloped lands outside and west of Redevelopment Subarea B. The flat landscape of the Southwest Plan Area is evident in the photograph. Such lands have historically been used for agricultural purposes and because of the lack of trees or development, views into the distance are relatively unrestricted and far reaching. On the other hand, 3.1.6-3B is a view west along Debbie Drive at Dutton Avenue in Redevelopment Subarea A and illustrates the predominately single story residences that may be found in this central eastern portion of the Southwest Plan Area.

To summarize, much of the Southwest Plan Area is built out, particularly to the north along Sebastopol Road and the U.S. Highway 101 corridor. Redevelopment subareas A and B are 93% urbanized as noted previously. Housing, industrial, commercial, business park and recreational land uses are scattered throughout the remainder of the Southwest Plan Area, including Redevelopment Subareas A and B. Portions of the Southwest Plan Area also remain undeveloped. Agriculture (the growing of crops or grazing) no longer retains a strong visual presence with undeveloped land generally cleared of grasses on an annual basis. Older developed portions of

the Southwest Plan Area, particularly to the northwest, appear rundown, unkempt and abandoned with unused buildings. Undeveloped areas generally appear semi-rural in character, while developed areas, inclusive of recently constructed business uses in the Northpoint Parkway area and development along Hearn Avenue and near U.S. 101 appear distinctly urban because of the greater density and intensity of development.

IMPACTS AND MITIGATION MEASURES

Introduction

Visual conditions within the Southwest Plan Area result from the interplay of developed and undeveloped conditions, which vary considerably from point to point throughout the Plan Area as indicated previously. The future appearance (and thus visual quality and community character), of the Southwest Plan Area, inclusive of Redevelopment Subareas A and B will be the result of existing conditions plus future development as time passes.

Standards of Significance

Visual quality is the perceived aesthetic value of an area based on a combination of inherent natural features and physical conditions, either natural or man-made. The analysis of visual quality considers natural elements which establish the character of the scene: these include landforms, existing vegetation, water, color and light among other considerations. In addition, alteration or disturbance of the natural scene over time is considered. Finally, changes resulting from a proposed action or series of actions are evaluated. Aspects of community character, or what a community appears to represent or signify to the observer result from the interplay of the physical elements that lead to the judgement of visual quality.

Visual quality and the aesthetic value of a given location in its current condition is a subjective judgement by the observer. The standards for determining the significance of visual impacts from development include the following:

- Visual impact at buildout would be measured by the amount of visual change adversely affecting an area's perceived aesthetic value or conditions of the setting.
- Visual impact would include the incompatibility of visual change of a project site as

compared to the surrounding environment and conditions of the setting. Incompatibility would include the potential for view obstruction or blockage.

- Visual impacts would be derived from project site grading, vegetation removal, the physical layout of buildings with respect to each other, building bulk and height, the density of building placement, site landscaping, parking areas and other features of development.

As noted previously, (refer to the Introduction section of this SEIR), impacts in this SEIR are projected to the year 2010 consistent with the buildout assumptions contained in the Southwest Area Plan.

In considering future development within Redevelopment Subareas A and B, and within the Southwest Plan Area as a whole, viewpoint location, including distance and altitude of the viewer with respect to a construction project site would influence visual impact perception. The elements of building configuration, building scale and mass, architectural style, open space and landscaping details would have the greatest influence from close-in viewpoints. As the observer moved away from a site, specific development details would become less important in defining visual impact while building bulk, shape and the overall extent of development would remain significant features within the field of view.

Although several projects proposed for development in the Southwest Plan Area have been dropped by the project sponsors from further consideration at this time, overall it appears that there is no significant change in project-specific development proposals since preparation of the 1994 Southwest Area Plan EIR (refer to Section 3.1.2, *Land Use*, and the discussion of the status of proposed projects included in Redevelopment Subareas A and B, pages 3.1.2-6 and 3.1.2-7). Nor does there appear to be any significant change in infrastructure projects as listed and described in the Southwest Area Plan and contained in Appendix A of this SEIR.

Development Assistance Program

The Development Assistance Program basically provides redevelopment financing for land acquisition, deteriorated structure removal, site preparation, relocation assistance, hazardous materials remediation and the removal of concrete runways at the Air Center. Redevelopment financing for these activities would not directly impact visual conditions within Redevelopment Subareas A or B, or within the Southwest Plan Area as a whole except for activities of deteriorated structure removal, site preparation and the removal of Air Center concrete runways. However, the Development Assistance Program could generate secondary impacts to visual quality and community character through the stimulation of proposed development and construction activities, and/or the removal of impediments to proposed development and construction activities.

Impact 3.1.6-1

Buildout as envisioned in the Southwest Area Plan and as assisted through the Redevelopment Plan would result in the conversion of undeveloped land parcels that are currently vacant to an urban condition. This development would constitute a significant change in visual conditions within central to south and west portions of the Southwest Plan Area, and visually contrast with remaining undeveloped lands to the west and south outside of the Southwest Plan Area. Thus the impact would be significant and unavoidable. (SU)

First, development in the northwest portion of the Southwest Plan Area would increase urbanization on lots that are currently partially used or undeveloped. Second, construction in the north to northeast portions of the Southwest Plan Area would increase the level of urbanization because of increased development intensity. Third, development in the center of the Southwest Plan Area and to the south and west would introduce urban land uses to what is predominantly viewed as an area semi-rural in character at the current time. Overall, Southwest Plan Area buildout would extend the urban form of Santa Rosa further to the southwest, west of U.S. 101 and south of Highway 12, increasing the geographic distribution of intensified land uses within the Urban Boundary. Because Redevelopment Subareas A and B are 93 % urbanized at this time, Impact 3.1.6-1 pertains to the larger Southwest Plan Area as a whole as stimulated by the Redevelopment Plan project. Thus the visual quality and community character impact is cumulative in this regard.

While this form of development would be consistent with the Southwest Area Plan and policies regarding growth and development, there would be an increase in development density and intensity in the Southwest Plan Area, which would constitute a significant change in visual conditions and community character. However, because the topography is flat, grading requirements would be minimized because of the lack of hillside areas and there would be no adverse topographic changes. There would be increased pavement for road construction, sidewalks, bikeways and parking areas. While few project plans have been submitted that illustrate building heights, it would be expected that most structures to be constructed within the Southwest Plan Area would be one to two stories in height, consistent with other existing structures in the Southwest Plan Area. However, with increased densities and building construction on currently undeveloped parcels, views of regional hillside areas and undeveloped lands from adjacent roadways and lots would be obstructed. The sense of open space that currently exists in many portions of the Southwest Plan Area would be lost. Vistas would be relegated to street corridors between developed parcels in many instances. Urban centered growth in the Southwest Plan Area would however, protect scenic qualities of the outlying rural areas.

Landscaping to be provided with new residential neighborhoods, commercial developments and parks would visually screen and reduce and the amount of perceived development in the Southwest Plan Area, and provide visual amenities enhancing localized views. The exception would be the potential removal of existing vegetation, particularly specimen oaks or oak woodland. This subject is discussed separately in Section 3.2.3, *Biological Resources*. It is important to note that while the Santa Rosa General Plan calls for development in the Southwest Plan Area, the change in visual conditions affecting the existing setting would remain significant. While the impact would not occur at one time, visual change would occur over a period of years and be gradual.

The Santa Rosa General Plan indicates that U.S. 101 and Highway 12 around the Southwest Plan Area are scenic roads.¹ These roads are defined under Objective TCS-4a as "special routes for visual enjoyment of the natural and urban setting ---." Because the Southwest Plan Area is flat and existing development along the edges of the U.S. 101 and Highway 12 corridors obstruct views to interior portions of the Southwest Plan Area, development of the Southwest Plan Area's interior would not be readily apparent from U.S. 101 or Highway 12, and these two highways as

scenic corridors would not be affected by buildout. However, it is important to note that future intensified development along the highway edges in the Southwest Plan Area would be seen from the Highways, and any infill development or redevelopment would be important to determining visual quality and sense community character to be gained as one passes by the Southwest Plan Area.

Mitigation Measure 3.1.6-1

The planning and design of projects for buildout of the Southwest Area Plan shall conform to the Goals, Objectives and Policies for Community Design as contained within the Community Design Program Chapter of the Southwest Area Plan. Conformance review would occur with each development decision utilizing the General Plan Urban Design Element, the Community Design Program of the Southwest Area Plan, and the City's Subdivision Design Guidelines to make decisions regarding proposed developments. Conformance review would also occur during the City's Design Review process prior to the issuance of grading and construction permits. (SU)

Mitigates:	Impact 3.1.6-1 (SU)
Implementation:	Design development, prior to construction
Responsibility:	Project sponsors in consultation with Santa Rosa Department of Community Development
Monitoring:	Santa Rosa Department of Community Development

With this mitigation, the visual impact as described above would still remain significant because of the magnitude and extent of visual change. From a planning and design perspective, the Community Design Program Chapter of the Southwest Area Plan is intended to complement the City Design Review process as a means to achieve specific goals for development within the Southwest Plan Area.

Special issues related to site development and design are included in the Chapter, among other considerations. With adoption of the Southwest Area Plan, there is in place a series of requirements and standards that would directly influence the visual nature and community character of future residential and commercial development in the Southwest Area. Goals, Objectives and Policies of the Community Design Program Chapter include considerations of building height and scale, design appearance, street landscaping, transitions from rural land to urban land, development density, preservation of visual amenities, cluster development to preserve visual and natural resources, design of community entries and focal points, lighting, signage,

building setbacks, other planning and design features and public involvement in the planning and design process.

It is important to note that significant unavoidable impact 3.1.6-1 would not make the Redevelopment Plan project inconsistent with the purpose and intent of the Southwest Area Plan. This is because the primary purpose of the Southwest Area Plan is to implement the City's General Plan, and the proposed Redevelopment Plan is intended to enhance development potential and remove impediments to development within the Southwest Plan Area as envisioned in the Southwest Area Plan. As the City Council stated in Resolution 21804 approving the Southwest Area Plan and in its Statement of Overriding Considerations for significant unavoidable adverse visual impacts:

"Benefits of the Project: Implementing the Area Plan would have the following benefits which offset the effects of the stated impacts.

- "1. It will advance the policies of the City and Sonoma County to promote City centered growth, which will:
 - "a. Minimize the cost of providing public services by producing a more compact and efficient pattern of development, and;
 - "b. Slow the rate at which higher value agricultural lands and open space outside the Urban Boundary may be converted to urban development by focusing growth in urban areas. This will help to prevent urban 'sprawl' in rural, unincorporated areas.
- "2. It will allow the City to meet its State mandated housing goals, and to provide its assigned fair share of regional housing needs."

Impact 3.1.6-2

Development Assistance Program financing for land acquisition and deteriorated structure removal would serve to improve the appearance of localized portions of Redevelopment Subareas A and B. This would be a beneficial visual quality and community character impact. (B)

Through the Development Assistance Program, lots that appear abandoned or show evidence of past land use activities would be expected to be improved in their appearance because of debris removal. In addition, lots of irregular shape and inadequate size that are currently unattractive to investors and lots that are not large enough to accommodate contemporary structures would be

recombined to increase development potential. Also, the removal of deteriorated structures would serve to assist in fulfilling the goals of the Redevelopment Plan project to eliminate deteriorated structures and erase the negative image and poor appearance of neighborhoods and business areas at specific locations.

Mitigation Measure 3.1.6-2

None required.

For informational purposes, Figure 3.1.6-4 is the Community Design Map as envisioned in the Area Plan. The development of community entries at Sebastopol/Wright Roads and Ludwig/Bellevue Avenues and other features of the Community Design Map are as explained in the Area Plan Community Design Chapter. It is considered that these features as shown on the Map and explained in the Plan would substantially assist in assuring the development of a community character that is identifiable and recognizable as unique to the Southwest Area. In addition, the cleanup and development of currently unused property and the removal of abandoned buildings would serve to improve the appearance of portions of the Plan Area.

Public Projects Program

Impact 3.1.6-3

Infrastructure construction of new roads, roadway widening, storm sewers, sanitary sewers and water supply, would require earth excavation, materials stockpiling and the use of construction equipment which would appear inconsistent with the setting. Road widenings would be expected to require the removal of existing trees at scattered locations which currently serve as visual amenities in the existing setting. (PS)

The appearance of construction equipment, excavations and materials stockpiling would be short-term in duration and localized, lasting during the actual period of construction. The number of trees that would need to be removed coincidental with infrastructure construction cannot be determined at this time in the absence of detailed project plans. Because existing trees visually frame and enclose existing roadways, mitigate views to some properties and structures that are unused and provide vertical emphasis within the flat landscape, their removal would be an adverse visual impact.

SOUTHWEST AREA PLAN

INFRASTRUCTURE

COMMUNITY DESIGN MAP



-  Scenic Roadway
-  Creek Corridors
-  Landscaped Parkways & Street Corridors
-  Sebastopol Rd. Design Plan
-  City Entries
-  Community / Neighborhood Focal Points
-  Open Space Preservation Areas (approximate locations)
-  Community Park

Figure 3.1.6-4: Community Design



February, 1994

1500' 0 1500'

SCALE IN FEET

DEPARTMENT OF COMMUNITY DEVELOPMENT



Mitigation Measure 3.1.6-3

The stockpiling of infrastructure supplies and equipment prior to installation shall be minimized to the extent practicable. Only materials required for several days of construction shall be stockpiled at any given site at one time. (I)

The removal of trees necessary to install infrastructure shall be compensated for consistent with the Street Design Standard Policies contained in the Community Design Chapter of the Southwest Area Plan. Adherence to the street tree mitigation noted above would be expected to improve the appearance of future conditions within the Southwest Plan Area. (I)

Mitigates:	Impact 3.1.6-3 (I)
Implementation:	Design development prior to construction, and during construction
Responsibility:	Santa Rosa Department of Public Works
Monitoring:	Santa Rosa Department of Public Works

Impact 3.1.6-4

If constructed as proposed, the Fulton/Wright Road overcrossing and interchange at State Highway 12 would be seen as increased urbanization in an area that currently appears semi-rural in character. The transition from semi-rural to urban conditions to the eastbound Highway 12 motorist would be sudden and abrupt. (SU)

Highway 12 is known as the Luther Burbank Memorial Highway in the Plan Area. Conditions of the setting along this highway as it proceeds west from the intersection of Fulton And Wright Roads toward the Town of Sebastopol, rapidly become semi-rural in character. In a reverse direction, proceeding east from Sebastopol along Highway 12, the first substantial evidence of urban development would be indicated by the overcrossing and interchange project at Fulton and Wright Roads. The transition from semi-rural to urban conditions would be sudden and abrupt. The semi-rural character of the setting would be terminated as the motorist would enter the City of Santa Rosa because of the height, length and mass of the overcrossing project. Views to and from the area on either side of the overcrossing would be interrupted by the elevated structure, reinforcing the abrupt change from urban to semi-rural and visa-versa depending on direction of travel.

It is acknowledged that freeway overcrossings such as the proposed Fulton/Wright Road overcrossing are common sites for the freeway traveler in Santa Rosa. This is true for the U.S. 101 corridor, but not for two-lane Highway 12 west of the Plan Area.

Mitigation Measure 3.1.6-4

The structure crossing Highway 12 shall be designed in such a way as to appear pleasing to the eye. In other words, it would be preferable to avoid large I beams supporting the roadway itself from assuming visual importance. The concrete exterior of the bridge structure could be designed to wrap around and screen from view all steel support work, and receive a textured treatment that is visually interesting and reduces the perceived scale and overall mass of the structure. However, the specific impact described above would remain significant and unavoidable. (SU)

Mitigates:	Impact 3.1.6-4 (SU)
Implementation:	Design development, prior to construction
Responsibility:	Santa Rosa Department of Public Works in collaboration with Caltrans
Monitoring:	Santa Rosa Department of Public Works

Significant unavoidable impact 3.1.6-4, would not make the Redevelopment Plan project inconsistent with the purpose and intent of the Southwest Area Plan. As explained previously, this is because the primary purpose of the Southwest Area Plan is to implement the City's General Plan, and the proposed Redevelopment Plan is intended to enhance development potential and remove impediments to development within the Southwest Plan Area as envisioned in the Southwest Area Plan. The Visual Quality and Community Character impact as described under Impact 3.1.6-4 was similarly identified for the Southwest Area Plan in the 1994 EIR prepared for the Area Plan project. However, the Santa Rosa City Council in Resolution 21804 approving the Southwest Area Plan and in its Statement of Overriding Considerations for the impact stated:

"Benefits of the Project: Implementing the Area Plan would have the following benefits which offset the effects of the stated impacts.

- "1. It will advance the policies of the City and Sonoma County to promote City centered growth, which will:
 - "a. Minimize the cost of providing public services by producing a more compact and efficient pattern of development, and;
 - "b. Slow the rate at which higher value agricultural lands and open space outside the Urban Boundary may be converted to urban development by focusing growth in urban areas. This will help to prevent urban 'sprawl' in rural, unincorporated areas.
- "2. It will allow the City to meet its State mandated housing goals, and to provide its assigned

fair share of regional housing needs.

- “3. It will maintain traffic corridor levels of service for the Wright/Fulton corridor, a major north-south arterial corridor on the west side of the City as well as State Highway 12, the most prominent east-west corridor through the City.
- “4. Implementation of the Fulton-Wright/State Highway 12 Interchange would result in general improvement of the regional air quality.”

Housing Program

The Housing Program provides redevelopment assistance to build, improve and preserve low and moderate income housing. Similar to the Development Assistance Program, Redevelopment subsidies for these activities could indirectly generate secondary impacts to visual quality and community character through the stimulation of proposed development and construction activities, and/or the removal of impediments to proposed development and construction activities. Therefore, the discussion of impacts and mitigation measures discussed above under the Development Assistance Program would apply equally to the Housing Program, with the exception of land acquisition and deteriorated structure removal under the Development Assistance Program. However, under the Housing Program, structural rehabilitation would be a beneficial impact in that it would assist in fulfilling the goals of the Redevelopment Plan project to remove blight, including zoning code violations, and buildings that are currently unsafe to occupy.

Notes - Visual Quality

1. Santa Rosa 2010, General Plan, July, 1991, Transportation and Circulation Element, Figure 4, Scenic Roads.

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3.1.7 CULTURAL RESOURCES

INTRODUCTION

A Cultural Resources study was conducted for the Southwest Area Plan and is the study on which this analysis based. The study included a two-level approach and: (1) summarized the archaeological and historical setting for the entire 3800-acre Plan area, including the identification of known resources and sensitive locations -- identified potential constraints on development, potential impacts to cultural resources and developed mitigation alternatives for a program-level environmental analysis, and (2) investigated thirty-five development proposal areas, which total approximately 860 acres on a project-specific basis to include field reconnaissance, impact evaluations based on available development plans, and prepared mitigation recommendations in accordance with CEQA and local historic and cultural preservation policies.

ARCHIVAL RESEARCH

The cultural resources archival review for the Southwest Santa Rosa Area was conducted by archaeologist David Chavez and historian Jan M. Hupman. Maps, reports and documents that relate to prehistoric and historic archaeological resources and resource potential within the Southwest Plan Area were reviewed at the California Archaeological Inventory Northwest Information Center at Sonoma State University in Rohnert Park (File No. 93-95).

Supplemental map review and historical research was conducted at the Bancroft Library and the Doe Library Map Room, both located at the University of California in Berkeley. The Sonoma County Historical Society's archival materials were also reviewed in the Sonoma County History Room at the Sonoma County Library in Santa Rosa.¹

FIELD INVESTIGATIONS

An archaeological field reconnaissance was conducted for all thirty-five project sites in June 1993. During the archaeological survey, close attention was given to the detection of those surface features that suggested the presence of prehistoric cultural deposits in this part of Sonoma County. Equal attention was given to the detection of historic artifacts, deposits and features that suggest the possibility of historical resources that are over fifty years old.

Generally, archaeological survey conditions were not good; dense grass cover was typically encountered on most of the inspected terrain, which compromised the study teams ability to locate and identify ground surface materials and features that suggested the presence of archaeological sites.

SETTING

Prehistory/Archaeology

The Southwest Santa Rosa Plan Area is located in the Sonoma Archaeological District, in the southernmost portion of the Russian River subregion. The Santa Rosa Valley has been described as an interface between the prehistoric cultures of central California and the San Francisco Bay region and those of the North Coast Ranges (Thompson 1979:4). Laguna de Santa Rosa, Santa Rosa, Matanzas and Roseland Creeks are all part of a locality that in prehistoric times provided extensive marshland and lacustrine resources. The Anadel obsidian source, which was important to central California obsidian trade, is located a few miles east of the Southwest Plan Area. These are all contributing factors in accessing local archaeological sensitivity.

It is apparent that the region in which the Southwest Santa Rosa Plan Area is located is a favorable setting for the occurrence of prehistoric archaeological resources; particular sensitivity exists along Santa Rosa and Roseland Creeks and the many unnamed intermittent and ephemeral creeks that characterize the area.

The archaeological record indicates that Native American use and occupation of the region extended throughout the known Sonoma Archaeological District prehistoric cultural sequence. Consequently, cultural deposits likely contain important information concerning issues of prehistoric settlement patterns, cultural change, trade, population movements and other important research considerations.

Ethnography

At the time of historical contact (circa 1800 A.D.), the Southwest Plan Area was occupied by the Southern Pomo. Their territory, which stretched approximately fifty miles north to south and twenty to forty miles east to west, encompassed the present-day cities of Santa Rosa, Sebastopol,

Guerneville, Gualala, Cloverdale and Healdsburg as well as the drainages of Rockpile, Big Sulphur, Dry, Pena, Mill and Santa Rosa Creeks and the Russian River (McLendon and Oswalt 1978:278-279).

The year-round villages of the Southern Pomo included domed-shaped, earth-covered, semi-subterranean sweathouses as well as large, similarly-constructed dance houses or assembly houses, often capable of accommodating the entire village population. The most common structures, however, were the small, domed, thatched-covered dwellings constructed on a bent-pole framework (Kroeber 1925; Bean and Theodoratus 1978:292-293).

Architecture

A comprehensive historic architectural survey of the Southwest Santa Rosa Plan Area was accomplished by Harris and Clark (1991).

The Southwest Santa Rosa Master Environmental Assessment included a comprehensive Historic Architectural Survey of the Southwest Plan Area. Seven hundred twenty four properties were estimated or known to have been constructed prior to 1946. Of these properties, it was determined eleven appear eligible for National Register listing, thirty-nine may become eligible for listing, four may become eligible as part of an historic district, twenty-five may be alleageable for local landmark designation based on their own merit, 249 may be eligible for local designation as part of an historic district, with the remaining properties not rated for national or local distinction.

Four historic districts are identified within the Southwest Plan Area: South Olive Park District; Goodman Avenue District, Dutton Avenue District; and Hughes/Sunset Avenue District. Also identified are nine potential historic districts: Sebastopol Road Commercial District; Sebastopol Road Industrial District; U. S. Naval Air Station District; Avalon Avenue District; Burbank Avenue District; McNinn Avenue District; Roseland Avenue District; North Stony Point Road District; and West Avenue District (Harris and Clark 1991).

IMPACTS AND MITIGATION MEASURES

Standards of Significance

Potential damage to or disturbance of important archaeological or historical resources, resulting from proposed development, would be considered significant impacts. In this SEIR, an important cultural resource is as defined in CEQA Guidelines section 15064.5 and/or as one which:

- is associated with an event or person of recognized significance in California or American history, or of recognized scientific importance in prehistory;
- can provide information which is both of demonstrable public interest and useful in addressing scientifically consequential questions;
- has a special quality such as oldest, best example, largest or last surviving example of its kind;
- is at least 100 years old and possesses substantial stratigraphic integrity; or
- involves important research questions that historical research has shown can be answered only with archaeological methods.

Development Assistance Program

The Development Assistance Program basically provides redevelopment financing for land acquisition, deteriorated structure removal, site preparation, relocation assistance, hazardous materials remediation and the removal of concrete runways at the Air Center. The Development Assistance Program could generate potential impacts to cultural resources through the stimulation of proposed development and construction activities, and/or the removal of impediments to proposed development and construction activities, particularly with respect to activities of deteriorated structure removal, site preparation and the removal of Air Center concrete runways within Redevelopment Areas A and B, or the Southwest Plan Area as a whole. Southwest Plan Area cultural resources investigations have revealed that high potentials exist for development projects resulting in significant impacts to potentially important cultural resources.

Because the Development Assistance Program could stimulate development in the Southwest Plan Area, potentially affecting cultural resources, the following impacts and mitigation measures are identified.

Archaeological Resources

Impact 3.1.7-1

Five prehistoric archaeological sites and five historic archaeological sites are recorded within the Southwest Plan Area. There are also isolated prehistoric cultural materials that have been discovered at seven locations, indicating that additional resources are likely present. These sites could be disturbed by site preparation and runway removal financed by the Redevelopment Plan and related secondary development. (PS)

Mitigation Measure 3.1.7-1

Based on what is known about the region, it is reasonable to assume that prehistoric cultural deposits can be found anywhere in the Southwest Plan Area. It is therefore recommended that no part of the Southwest Plan Area be exempt from comprehensive archaeological study. Those portions of the Southwest Plan Area that have not been subjected to archaeological field investigations shall be studied as part of the development plan and environmental review processes as new project proposals come on line

If field reconnaissance results in the recording of prehistoric archaeological sites that cannot be avoided and preserved, and the importance of the cultural deposits cannot be determined from surface evidence, then subsurface testing programs shall take place. Testing procedures shall be designed to specifically determine the boundaries of sites, the depositional integrity and the cultural importance of the resources. These investigations shall be conducted by qualified professionals knowledgeable in regional prehistory. The testing programs shall be conducted within the context of appropriate research considerations and should result in detailed technical reports that define the exact project impacts to important resources and present comprehensive mitigation programs for addressing those impacts as explained further below.

Development-related impacts to important prehistoric archaeological sites shall be mitigated by one or more of the following actions, ~~the following alternatives~~. (I)

1. Avoidance of archaeological sites through modification of development plans that would allow for the preservation of the resources. Incorporation of site locations into protected open space or parklands would serve this purpose.
2. Covering or "capping" sites with a protective layer of fill. This could be a very good way of mitigating potential impacts in situations where public access may be increased as a result of development. Archaeological monitoring during the filling process would be recommended.
3. In circumstances where archaeological deposits cannot be preserved through avoidance or capping, data recovery through excavation would be the recommended plan. This measure shall consist of excavating those portions of the sites that would be adversely impacted. The work shall be accomplished within the context of a detailed research design and in accordance with current professional standards. The program shall result in the extraction of sufficient

volumes of archaeological data so that important regional research considerations can be addressed. The excavations shall be accomplished by qualified professionals and detailed technical reports should result.

Mitigates:	Impact 3.1.7-1 (I)
Implementation:	Prior to/during construction
Responsibility:	Project Sponsor
Monitoring:	Santa Rosa Department of Community Development

In considering subsurface testing and excavations of prehistoric archaeological sites, consultation with the local Native American community is essential; all aspects of the programs, including the treatment of cultural materials and particularly the removal, study and reinterment of Native American burials should be addressed. All applicable State and local legal requirements concerning these issues should be strictly enforced.

Known historic archaeological resources are present in the Southwest Plan Area as well. Historical maps show structures that were present on various properties in the past but no longer exist; project-specific archaeological investigations should address the potential for historic archaeological resources. If field reconnaissance results in the recording of historic archaeological deposits and features, supplemental archival research and subsurface testing may be required to determine their importance. If important resources are threatened by development as stimulated through the Development Assistance Program, then recommended mitigation alternatives would be similar to those presented for prehistoric archaeological sites.

Historic Properties

Impact 3.1.7-2

Approximately 740 properties within the Southwest Plan Area including Redevelopment Subarea B west of South Wright Road are known or estimated to have been constructed prior to 1946 which could be disturbed by development. (PS)

Mitigation Measure 3.1.9 7-2

Those portions of the Southwest Plan Area that have not been subject to site-specific cultural resources evaluation shall undergo an historic architectural review based on the existing inventories as new development projects come on line. No part of the Southwest Plan Area should be exempt from the process of determining if structures meet CEQA criteria as important historic resources.

If development-related impacts to important historic structures are identified, ~~significant impacts could be mitigated by the following alternatives.~~ one or more of the following actions shall be required.(I)

1. Avoidance of historic properties through modification of development plans that would allow for the preservation of the resources at their present locations. This management program could also include restoration of structures to a specific period or theme, particularly within historic districts, and preservation with adaptive re-use.
2. Relocation of historic structures to places where they can be preserved. Community parks and open space provide opportunities in this regard.
3. If other mitigation alternatives cannot be implemented and historic properties may be damaged or destroyed, it is recommended that an "Historic American Building Survey" be accomplished for the structures. Such a procedure involves the precise recording of the structures through measurements, drawings and photographs. The documentation of the resources is on standardized forms and is accurate in detail to such an extent that after demolition, the historic structures could be reconstructed from the survey data. Copies of the documents should be filed with all appropriate State and local repositories. This mitigation program could include salvage and selective re-use of building features once the survey is completed.

Mitigates:	Impact 3.1.7-3 2(I)
Implementation:	Prior to construction
Responsibility:	Project Sponsor
Monitoring:	Santa Rosa Department of Community Development

These mitigation measures would not only reduce significant impacts to important historic resources for CEQA compliance, but would also be in keeping with Santa Rosa Department of Community Development Southwest Area Plan historic preservation goals, objectives and policies.

Public Projects Program

Field investigations and archival research have resulted in the identification of archaeological sites and sensitive locations within the Southwest Plan Area. It is cautioned that additional archaeological sites may be buried anywhere in the Southwest Plan Area, including Redevelopment subareas A and B. Therefore, Impact and Mitigation Measure 3.1.7-1 discussed above for the Development Assistance Program would apply equally to Public Projects Program. In addition, Mitigation Measure 3.1.7-3 is added as follows:

Mitigation Measure 3.1.7-3

In the event that unsuspected archaeological remains are discovered during subsurface construction for public projects of roadways, water supply, sanitary sewer and/or storm drainage, excavation and land alteration work in the vicinity of the find shall be halted and a qualified archaeologist consulted. Prompt evaluations will then be made regarding the finds and a resource management plan that is consistent with CEQA requirements will then be implemented, inclusive of implementing Mitigation Measure 3.1.7-1 as described under the Development Assistance Program. If prehistoric archaeological deposits are discovered, local Native American organizations shall be consulted and involved in making resource management decisions. All applicable State and local legal requirements concerning the treatment of cultural materials and Native American burials shall be enforced. (I)

Mitigates:	3.1.7-1 (I)
Implementation:	During project construction.
Responsibility:	Project sponsor
Monitoring:	Santa Rosa Department of Community Development

Housing Program

The Housing Program provides assistance to build, improve and preserve low and moderate income housing. Redevelopment subsidies for these activities could generate impacts to cultural resources through the rehabilitation of historic structures, the stimulation of development and housing construction activities, and/or the removal of impediments to development and housing construction activities, within Redevelopment Subareas A or B, or the Southwest Plan Area as a whole. Therefore, the impacts and mitigation measures described above for the Development Assistance Program and Public Projects Program would apply equally to the Housing Program.

Notes - Cultural Resources

1. The following are the major historic property listings reviewed: the National Register of Historic Places, the California Inventory of Historic Resources, the California Historical Landmarks and Five Views: An Ethnic Sites Survey for California. The City of Santa Rosa's Historic Properties Inventory (1990), compiled from various cultural heritage surveys and published by the Department of Community Development (DCD), was also consulted. Emphasis was placed on the Southwest Santa Rosa Master Environmental Assessment Historic Architectural Survey Report and its Appendix entitled Southwest Santa Rosa MEA Historic Resource Inventory List of Notable Architectural Properties by Dennis E. Harris and Susan M. Clark (1991) as well as the Stony Point Road Reconstruction Project Historic Architectural Survey Report by Mary and Adrian Praetzellis et al. (1989).

3.1.8 HAZARDOUS MATERIALS

This section assesses potential adverse environmental, health, and safety impacts that could result from exposure to project-related hazards. Where appropriate, this section also identifies mitigation measures. Potential hazards include disturbing contaminated soil and groundwater, and handling hazardous materials. For purposes of this SEIR, hazardous materials are considered materials that, because of their quantity, concentration, or physical or chemical characteristics, pose substantial hazards to human health or safety, or to the environment, particularly if released. Hazardous wastes are a subset of hazardous materials. They pose substantial hazards to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

SETTING

Regulatory Setting

Hazardous Materials Management and Emergency Planning

State and federal laws require businesses that handle hazardous materials to ensure that the hazardous materials are properly handled, used, stored, and disposed of, and in the event that such materials are accidentally released, to prevent or reduce injury to health and the environment. California's Hazardous Materials Release Response Plans and Inventory Law, sometimes called the "Business Plan Act," aims to minimize the potential for accidents involving hazardous materials and to facilitate an appropriate response to hazardous materials emergencies. The law requires businesses that use hazardous materials to provide inventories of those materials to designated emergency response agencies, to illustrate on a diagram where the materials are stored, to prepare an emergency response plan, and to train employees to use the materials safely. This law is implemented locally by the Santa Rosa Fire Department and the Sonoma County Department of Emergency Services, which also enforce certain fire code regulations pertaining to hazardous materials storage.

Worker Safety

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. The California Division of Occupational Safety and Health is responsible for developing and enforcing workplace safety standards and

assuring worker safety in the handling and use of hazardous materials. Among other requirements, the California Division of Occupational Safety and Health obligates all businesses to prepare Injury and Illness Prevention Plans. The Hazard Communication Standard requires that workers be informed of the hazards associated with the materials they handle. For example, manufacturers are to appropriately label containers, Material Safety Data Sheets are to be available in the workplace, and employers are to properly train workers.

Hazardous Waste Handling

The U.S. Environmental Protection Agency has authorized the California Department of Toxic Substances Control to enforce hazardous waste laws and regulations in California. Requirements place “cradle-to-grave” responsibility for hazardous waste disposal on the shoulders of hazardous waste generators. Anyone who creates a hazardous waste is considered a hazardous waste generator. Generators must ensure that their wastes are disposed of properly, and legal requirements dictate the disposal requirements for many waste streams (e.g., banning many types of hazardous wastes from landfills). All hazardous waste generators must certify that, at a minimum, they make a good faith effort to minimize their waste and they select the best waste management method available. Hazardous waste laws and regulations are enforced locally by the Santa Rosa Fire Department and the Sonoma County Department of Emergency Services.

Soil and Groundwater Contamination

The Comprehensive Environmental Response, Compensation, and Liability Act and the Superfund Amendments and Reauthorization Act (together commonly referred to as “Superfund”) establish a regulatory process to address the release of hazardous substances that may be harmful to public health and the environment. This process requires responsible parties to clean up contamination and enables parties harmed by hazardous materials releases to be compensated. California has its own version of Superfund, the Hazardous Substances Account Act. Many of the regulatory guidelines, standards, and methods established as part of the Superfund process are used to evaluate health and environmental risks at other sites. The oversight of areas where hazardous materials have been released to the environment often involves several agencies that may have overlapping authority and jurisdiction. The California Department of Toxic Substances Control and the California Water Quality Control Board (North Coast Region), are two state agencies that

are often responsible for sites where hazardous materials releases have occurred. In the Southwest Plan Area, the California Water Quality Control Board is more commonly the administering agency that takes preemptive authority over the cleanup of a site, particularly when groundwater is contaminated. Sonoma County and the City of Santa Rosa are administering agencies for some sites, particularly when groundwater contamination is not a concern. Site cleanups can be overseen by local agencies when written notification is given to the California Department of Toxic Substances Control and the California Water Quality Control Board. Releases of hazardous substances in excess of certain quantities must be reported to the California Department of Toxic Substances Control within 30 days of discovery.

Hazardous Building Components

Structural building components may contain hazardous materials such as asbestos, polychlorinated biphenyls (PCBs), lead, and mercury. These materials are subject to various regulatory schemes.

- ***Asbestos***

Asbestos is regulated both as a hazardous air pollutant and as a potential worker safety hazard. Bay Area Air Quality Management District and California Division of Occupational Safety and Health regulations restrict asbestos emissions from demolition and renovation activities, and specify safe work practices to minimize the potential to release asbestos fibers. These regulations prohibit emissions of asbestos from asbestos-related manufacturing, demolition, or construction activities; require medical examinations and monitoring of employees engaged in activities that could disturb asbestos; specify precautions and safe work practices that must be followed to minimize the potential to release asbestos fibers; and require notice be given to federal and local government agencies prior to beginning renovation or demolition that could disturb asbestos. California requires licensing of contractors who conduct asbestos abatement activities.

- ***PCBs***

The California Department of Toxic Substances Control has classified PCBs as a hazardous waste when concentrations exceed 5 parts per million (ppm) in liquids or when a standard extract of a non-liquid exceeds 5ppm. ~~50 ppm in non-liquids.~~ Electrical transformers and fluorescent light ballasts may contain PCBs, and if so, they are regulated as hazardous waste and must be transported and disposed of as hazardous waste. Ballasts manufactured since 1978 should not contain PCBs and are required to have a label stating that PCBs are not present.

- ***Lead***

California Division of Occupational Safety and Health standards establish a maximum safe exposure level for types of construction work where lead exposure may occur, including demolition of structures where materials containing lead are present; removal or encapsulation of materials containing lead; and new construction, alteration, repair, and

renovation of structures with materials containing lead. Inspection, testing, and removing lead-containing building materials is to be performed by state-certified contractors who are required to comply with applicable health and safety and hazardous materials regulations. The U.S. Department of Housing and Urban Development has published guidelines for the evaluation and control of lead-based paint hazards in housing.¹ Typically, building materials with lead-based paint attached are not considered hazardous waste unless the paint is chemically or physically removed from the building debris.

■ **Mercury**

Spent fluorescent light tubes, thermostats, and other electrical equipment contain heavy metals that, if disposed of in landfills, can leach into soil or groundwater. Lighting tubes sometimes contain concentrations of mercury that exceed regulatory thresholds for hazardous waste and, as such, must be managed in accordance with hazardous waste regulations. Elemental mercury can be found in many electrical switches, including thermostats, and when disposed of, such mercury is considered hazardous waste.

Hazardous Materials Transportation

The U.S. Department of Transportation has developed regulations pertaining to the transport of hazardous materials and hazardous wastes by all modes of transportation. The U.S. Postal Service has developed additional regulations for the transport of hazardous materials by mail. U.S. Department of Transportation regulations specify packaging requirements for different types of materials. The U.S. Environmental Protection Agency has also promulgated regulations for the transport of hazardous wastes. These more stringent requirements include tracking shipments with manifests to ensure that wastes are delivered to their intended destinations. In California, the California Highway Patrol, the California Department of Transportation, and the California Department of Toxic Substances Control play key roles in enforcing hazardous materials transportation requirements.

Existing Conditions

As shown in Table 3.1.8-1, a number of sites in the Southwest Plan Area are listed on the *State of California Hazardous Waste and Substances Sites List* compiled in accordance with Government Code Section 65962.5.² Soil and groundwater conditions at some of these sites have been remediated, and some contaminated sites do not appear on the list. The following text summarizes known soil and groundwater conditions within and in the vicinity of the Southwest Plan Area to the extent that information has been provided by the California Water Quality Control Board and the Sonoma County Health Services Department.

**TABLE 3.1.8-1
LOCATIONS IN THE VICINITY OF THE SOUTHWEST PLAN AREA
THAT APPEAR ON THE HAZARDOUS WASTE AND SUBSTANCES SITES LIST**

Address	Facility Name
1234 Apollo	Bertoli, Augustine, Jr.
60 Barham	Schneider, Egon
2951 Coors	Mani, Richard
2575 Corby	Shell (Corby)
2770 Corby	Biddulph Chevrolet
2800 Corby	Veale Volkswagen
2979 Corby	Prestige Lincoln Mercury
2423 Dutton	Rays Food Store
255 Dutton	Shell (Dutton)
(No Street Number) Finley	USSRNAAS
3840 Finley	Wofsy, Alan
3842 Finley	Santa Rosa Air Center
(No Street Number) Finley Ave and Wright Rd.	Santa Rosa Naval Auxiliary
1599 Hampton	Frontier Electric
440 Hearn	AM/PM Mini Mart
940 Ludwig	Santa Rosa Meat & Poultry
816 McMinn	Quick Stop Market
841 McMinn	McMinn Avenue
3939 Moorland	Hogue Construction Co.
4000 Moorland	Bartley Pump
4095 Moorland	Conway Western Express
4101 Moorland	West Cal Tractor
4122 Moorland	Todd Construction
4385/4389 Price	Wright School
285 Roberts	Shamrock Materials
355 Robles	Sonoma County Transit
111 Sebastopol	Zedrick, Dave
1124 Sebastopol	Triple S Tires
1175 Sebastopol	Taylor Bus Company
1289 Sebastopol	Slakey Brothers
1733 Sebastopol	Almetco, Inc.
1980 Sebastopol	Texaco, Bills
330 Sebastopol	Exchange Bank Data Center
3309 Sebastopol	Selvage Concrete
370 Sebastopol	Unocal #4320
3995 Sebastopol	Henris Supply
4129 Sebastopol	Barron, Sam and Charlene
4141 Sebastopol	Della Zoppa, David
760 Sebastopol	BP/Redwood Oil #110

TABLE 3.1.8-1
LOCATIONS IN THE VICINITY OF THE SOUTHWEST PLAN AREA
THAT APPEAR ON THE HAZARDOUS WASTE AND SUBSTANCES SITES LIST

Address	Facility Name
8 Sebastopol	Point St. George Fisherie
805 Sebastopol	Baugh, Wilson Enterprise
921 Sebastopol	Beacon #489 (Ultramar)
995 Sebastopol	Bevan Investment
3400 Standish	Empire Waste Management
3405 Standish	Murrill, James
150 Todd	Bepex Corporation
879 Wright	Pacific Coast Bldg. Produc.

Source: California Department of Toxic Substances Control, *State of California Hazardous Waste and Substances Sites List*, April 1998, pp. 276-287.

Underground Storage Tanks

The location of leaking underground storage tanks closely coincides with the commercial and industrial sites in the area. Contaminants from leaking underground storage tanks include petroleum hydrocarbons (e.g., gasoline and diesel) and benzene, toluene, ethylbenzene, and xylenes (BTEX). Gasoline additives, such as 1,2-dichloroethane and methyl-*t*-butyl ether (MTBE) have recently been discovered in groundwater at some locations. Current information regarding leaking underground storage tanks within and in the vicinity of the Southwest Plan Area is provided in Table 3.1.8-2.

McMinn Avenue State Superfund Site

Most of the soil and groundwater contamination at the McMinn Avenue State Superfund Site originates along Sebastopol Road between State Highway 101 and Kenmore Lane. Many sources of contamination have been identified, including existing and former service stations, vehicle yards, and various commercial businesses with underground storage tanks. Table 3.1.8-3 summarizes the status of the various properties within the Superfund Site, and a brief history is provided below.

In 1981, the North Coast Regional Water Quality Control Board and Sonoma County learned of contamination when they received complaints of gasoline odors in well water. Domestic well water samples revealed that some wells in the area contained gasoline, diesel, and volatile organic compounds associated with both motor vehicle fuels and solvents. These wells were located near McMinn Avenue and Sebastopol Road, and near Dutton Avenue and Roseland Avenues. Because the sources of contamination were initially unknown, the Regional Water Quality Control Board and Sonoma County requested that the California Department of Toxic Substances Control add the site to the State Superfund List. The subsequent listing in 1985 enabled the California Department of Toxic Substances Control to fund state work at the site without having identified a party responsible for the contamination.

The California Department of Toxic Substances Control confirmed that groundwater samples from seven of the 38 private wells tested contained levels of contaminants above state drinking water

TABLE 3.1.8-2
LOCATIONS IN THE VICINITY OF THE SOUTHWEST PLAN AREA AFFECTED BY LEAKING
UNDERGROUND STORAGE TANKS

Name and Location	Current Status
Selvage Concrete 3309 Sebastopol Road	The facility manufactures concrete septic tanks. Gasoline storage tanks were used for fueling vehicles. During removal of a 1,000-gallon underground storage tank in 1986, analysis of soil samples indicated elevated levels of petroleum hydrocarbons. Effected soil has been removed to the extent feasible, but residual soil and groundwater contamination remains. Five monitoring wells have been installed. The case is being evaluated to determine whether further action is necessary.
Rays Food Center 2423 Dutton Avenue	In 1986, three underground storage tanks and their associated piping were removed. Soil samples indicated elevated levels of petroleum hydrocarbons. Additional soil sampling was performed to verify that gasoline had been released. Soil in the area of the excavation was subsequently removed to approximately 17 feet below ground surface. Additional work delineated the extent of soil and groundwater contamination. Remedial investigations have been completed, and a corrective action plan is due.
Schneider, Egon 60 Barham West	Two 1,000-gallon underground storage tanks were removed in 1990. Soil was excavated to approximately 9.5 feet below ground surface. Soil and water sampling indicated petroleum hydrocarbon and BTEX contamination. A preliminary site assessment was performed. Field activities included installation of three piezometers and one groundwater monitoring well. Additional soil and groundwater investigations have been completed, and the responsible party is working toward remediation.
AM/PM Mini Mart 440 Hearn Avenue	Underground gasoline storage tanks were removed in 1990. The California Water Quality Control Board requested a preliminary site workplan, and 12 monitoring wells were installed between 1993 and 1998. The extent of gasoline, BTEX, and MTBE contamination has not been determined. Work is in progress.
Biddolph Chevrolet 2770 Corby Avenue	The property is an automobile dealership. Four underground storage tanks installed in 1964 remained in operation until replaced with two new tanks in 1986. Holes were noted in two of the removed tanks. Soil sampling indicated elevated levels of petroleum hydrocarbons, motor oil, benzene, toluene, and xylene. In 1990, the California Water Quality Control Board issued a Cleanup and Abatement Order. The order was revised in 1991. Six monitoring wells have been installed. Groundwater has been affected by gasoline, diesel, BTEX, MTBE, and 1,1-dichloroethane. The remaining tanks were removed in March 1999. Some of the affected soil has been removed, but additional work is required.
Veale Volkswagen 2800 Corby Avenue	In 1969, three underground storage tanks were installed. When removed in 1987, leakage from the piping connections at the tanks was observed and reported to the California Water Quality Control Board. Three monitoring wells have been installed. A Corrective Action Plan has been submitted and excavation has been proposed. Additional monitoring wells are to be installed to monitor post excavation water quality.

TABLE 3.1.8-2
LOCATIONS IN THE VICINITY OF THE SOUTHWEST PLAN AREA AFFECTED BY LEAKING UNDERGROUND STORAGE TANKS

Shell 2575 Corby Avenue	Since a release was reported in 1987, extensive site investigations have included completing a hydrogeologic assessment and installing monitoring wells and groundwater remediation systems. A groundwater monitoring plan is being implemented. Free product was found in several monitoring wells. Extensive groundwater remediation has been completed. The Sonoma County Environmental Services Department has requested further definition of an MTBE plume.
Bepex Corporation 150 Todd Road	Removal of an underground storage tank resulted in the detection of volatile organic compounds in groundwater not necessarily associated with the tank. Groundwater monitoring wells have been installed, and work is required to define the extent of the contamination and the need for remedial action.
Hogue Construction 3939 Moorland Avenue	Three underground storage tanks were removed. A workplan was requested to investigate the effect of leaked gasoline and diesel on groundwater. Site investigations involved soil and groundwater sampling. A groundwater monitoring well was installed. Petroleum hydrocarbons and BTEX were detected in groundwater. Additional underground storage tanks have been removed, and the responsible party has requested closure.
Pacific Supply 879 Wright	Gasoline and diesel releases have resulted in marginal levels of benzene and MTBE in groundwater. Monitoring wells are being sampled, and no active remediation is expected to be necessary.
Della Zoppa Property 4141 Sebastopol	Site investigations were conducted. No further work has been undertaken. Several monitoring wells have been installed, and contamination has been found in some of them.
Barron, Sam & Charlene 4129 Sebastopol	The Sonoma County Health Services Department recommended case closure to the California Water Quality Control Board, which concurred. Closure will be completed when monitoring wells are removed.
Wright School 4385/4398 Price	Four monitoring wells have been installed. A feasibility study for possible remediation is due.
CWX 4095 Moorland	The site has been overexcavated twice. A water supply well contained free product; therefore, it was destroyed and replaced. The new well is monitored quarterly.
West Cal Tractors 4101 Moorland	Investigations are underway to determine how much contamination originates on site and how much has migrated from the CWX site at 4095 Moorland.
Pet Prevent-A-Care 4122 Moorland	Overexcavation has been completed, but no documentation has been submitted and monitoring wells have not been installed.

Source: Sonoma County Health Services Department and California Water Quality Control Board, North Coast Region

TABLE 3.1.8-3
STATUS OF PROPERTIES WITHIN THE McMINN SUPERFUND SITE

Name and Location	Type of Contamination ¹	Current Status
Allefax	THP in soil.	Two underground storage tanks removed in 1998. Initial workplan ordered to determine extent of contamination.
Acme Auto Wreckers 1885 Sebastopol Road	TPH and metals in soil. TPH and 1,1,1-TCA in groundwater.	Soil cleanup and investigation initiated. Surface water controls implemented. Site discharges controlled and stable.
Almetco Inc. 1733 Sebastopol Road	1,1,1-TCA in groundwater. Chromium (VI) and hydrofluoric acid in soil. Oil and grease in domestic well.	Further investigation of underground tank initiated, and additional work needed to assess metals and solvents. Cleanup and Abatement Order issued.
BP/Redwood Oil 760 Sebastopol Road	TPH in soil. TPH, 1,2-DCA, MTBE, and other VOCs in groundwater.	Underground storage tanks removed in 1998 and soil over excavated. Monitoring well field installed. Cleanup and Abatement Order issued. Active groundwater remediation system will be installed in 2000. Commingled plume with 805 and 921 Sebastopol Road.
Baugh, Wilson Enterprises (former service station) 805 Sebastopol	TPH in soil. TPH, PCE, TCE, vinyl chloride, and other VOCs in groundwater.	Four underground storage tanks removed in 1998. Four monitoring wells installed. Site activities not thought to be responsible for PCE, TCE, and vinyl chloride. Commingled plume with 760 and 921 Sebastopol Road.
Beacon Service Center 921 Sebastopol Road	TPH and MTBE in soil and groundwater.	Cleanup and Abatement Order issued. Monitoring well field plus 3 extraction wells installed. Active groundwater remediation system installed. Commingled plume with 805 and 760 Sebastopol Road.
Bevan Investments 995 Sebastopol Road	TPH and MTBE in soil. TPH, 1,2-DCA, and MTBE in groundwater.	Monitoring well field installed. Cleanup and Abatement Order issued. Soil excavation conducted. Corrective Action Plan submitted.
C&D Batteries 265 Roberts Avenue	Metals, low pH, sulphuric acid, and oil and grease in soil. Lead, sulphuric acid, and VOCs in groundwater.	Soil, surface water, and groundwater investigation completed. Cleanup very near completion; case may soon be closed.
Exchange Bank Data Center 330 Sebastopol Road	TPH in soil and groundwater.	Monitoring well field installed. Investigation of extent of contamination completed. Corrective Action Plan submitted.
Frontier Electric 1599 Hampton Way	TPH in soil and groundwater.	Groundwater assessment conducted. Limited additional assessment required prior to case closure.
McGowen Auto Wrecking (former) 112 Holbrook	Metals and TPH suspected in soil and groundwater.	Initial investigation conducted. Report of field work pending.
Point St. George Fisheries 8 Sebastopol Road	TPH in soil. TPH and PCE in groundwater.	Monitoring well field installed. Cleanup and Abatement Order issued. Soil excavation conducted. Remaining source area under investigation.
Quick Stop Market 816 McMinn Avenue	TPH in soil. TPH, PCE, DCE, and MTBE in groundwater.	Monitoring well field installed. Investigation of extent of contamination in progress. Commingled plume with 1124 Sebastopol Road.
Redwood Oil Bulk Plant (Chevron Bulk Plant) 258 Roseland Avenue	TPH, 1,2-DCA, MTBE, other VOCs, and free product in soil and groundwater.	Monitoring well field installed. Cleanup and Abatement Order issued. Bulk plant dismantled and treatment system, including groundwater extraction, being evaluated. Remedial Action Plan submitted.

TABLE 3.1.8-3
STATUS OF PROPERTIES WITHIN THE McMINN SUPERFUND SITE

Name and Location	Type of Contamination ¹	Current Status
Reuben's Tacos 565 Sebastopol Road	TPH and methylene chloride in soil. TPH and 1,2-DCA in groundwater.	Cleanup and Abatement Order issued. Monitoring well field installed. Investigation of extent of contamination completed, and final corrective action plan (oxygen release compound for enhanced <i>in situ</i> bioremediation) implemented with ongoing monitoring. These actions expected to allow case closure.
Roseland Paint Center 1160 Sebastopol Road	Benzene and xylenes in groundwater.	California Department of Toxic Substances Control installed 2 wells to monitor off-site residential well. Underground thinner tank removed in 1980s. No release currently suspected. Low levels of contaminants likely related to off-site sources.
Sebastopol Road at West Avenue	PCE and byproducts, <i>cis</i> -1,2-DCE, and vinyl chloride in groundwater.	Workplan submitted to investigate effect on groundwater.
Shell 255 Dutton Avenue	TPH, MTBE, and free product in soil and groundwater.	Monitoring well field installed. Cleanup and Abatement Order issued. Free product recovery system installed. Additional investigation required. Commingled plume with 257 Dutton Avenue. Corrective Action Plan submitted.
Shell, DZ Inc. 257 Dutton Avenue	TPH, MTBE, and free product in soil and groundwater.	Three monitoring wells installed. Cleanup and Abatement Order issued. Free product recovery system installed. Bulk plant dismantled. Commingled plume with 255 Dutton Avenue.
Slakey Brothers 1289 Sebastopol Road	TPH and 1,1,1-TCA in groundwater. Minor benzene, TCA, xylenes, and 1,2-dichloropropane in domestic well.	Monitoring well field installed. Further investigation required.
Taylor Bus Company 1175 Sebastopol Road	TPH in soil and groundwater.	Four monitoring wells installed. Lateral extent of contamination defined.
Texaco (Bill's) 1980 Sebastopol	TPH and free product in soil and groundwater.	Cleanup and Abatement Order issued. Monitoring well field installed. Extent of contamination defined and soil excavation pending.
Triple S Tires 1124 Sebastopol Road	TPH and 1,2-DCA in groundwater.	Monitoring well field installed. Additional assessment of off-site migration needed. Commingled plume with 816 McMinn Avenue.
Unocal 370 Sebastopol Road	TPH in soil. TPH, 1,1-DCA, 1,1,1-TCA, and MTBE in groundwater.	Monitoring well field installed. Soil excavation conducted. Final corrective action plan needed.

Notes:

1. Contaminants are abbreviated as follows:

TPH	total petroleum hydrocarbons
VOCs	volatile organic compounds
MTBE	methyl- <i>t</i> -butylether
DCE	dichloroethylene
<i>cis</i> -1,2-DCE	<i>cis</i> -1,2-dichloroethylene
TCE	trichloroethylene
PCE	tetrachloroethylene
1,1-DCA	1,1-dichloroethane
1,2-DCA	1,2-dichloroethane
1,1,1-TCA	1,1,1-trichloroethane
low pH	acidic conditions

Source: California Water Quality Control Board, North Coast Region

standards. The contaminants included such volatile organic compounds as tetrachloroethylene, 1,2-dichloroethane, vinyl chloride, and benzene. Twelve monitoring wells were then installed, and gasoline and diesel components were found in six of them. In two cases, liquid gasoline was observed floating on the water table. Two wells contained tetrachloroethylene, 1,2-dichloroethane, and trichloroethylene. Most of the petroleum contamination was found in the shallowest groundwater aquifer (generally encountered around 10 feet below the surface), but some of the solvent contamination was found in both the shallow aquifer and deeper aquifers.

In 1992, gasoline vapors were detected in sewers and businesses along Sebastopol Road. Sonoma County declared a Local State of Emergency due to the build up of potentially explosive vapors between West Avenue and McMinn Avenue. The Regional Water Quality Control Board issued an emergency Cleanup and Abatement Order to the Beacon service center, which had leaked gasoline into the sewer line. Leaking gasoline tanks and lines were removed, and a soil and groundwater remediation system was installed. The sewer has since been lined in this area to prevent infiltration of contaminated groundwater.

Also in 1992, the Regional Water Quality Control Board requested assistance from the U.S. Environmental Protection Agency to aid in determining other potential contamination sources. The U.S. Environmental Protection Agency responded by conducting an extensive field investigation in 1992 and 1993. Since 1995, the Regional Water Quality Control Board has been the lead agency for the entire McMinn Avenue State Superfund Site. It oversees the individual site cleanup investigations and remediation in the area. The Regional Water Quality Control Board continues to require responsible parties to investigate and cleanup contaminated sites, and it closely coordinates its activities with the Sonoma County Health Services Department and other federal, state, and local agencies.

In 1998, the Regional Water Quality Control Board served a draft Cleanup and Abatement Order on the South Park County Sanitation District, Sonoma County, and the Northwest Title Company. It addressed groundwater contamination originating in the vicinity of the intersection of West Avenue and Sebastopol Road. A former dry cleaner is considered the likely source of the contamination. Cleaning solvents disposed of in the sewer have leaked into the groundwater

through cracks. Subsequently, the South Park County Sanitation District and Sonoma County developed a Plan of Action to investigate and determine the extent of the contamination and to prepare a schedule of action for providing alternative water supplies for certain domestic wells within the plume area. The South Park County Sanitation District and Sonoma County will provide alternative water sources to 18 residences whose sole source of water is well water. In addition, residences on Emmy Lou Court will be hooked up to the City water system in 2000. Because the extent of the contamination is unknown, wells on additional properties may also be contaminated and require an alternative water source.

Optical Coatings Laboratory Inc.

Optical Coating Laboratory Inc., located on Northpoint Parkway, manufactures a variety of products, including thin film coatings for optical devices. Optical Coating Laboratory has been in operation since 1959. During this time, solvents and other chemicals have been discharged to soils, groundwater, and surface waters. Groundwater contamination has migrated to four water-bearing zones beneath the site. Groundwater contamination has been detected in monitoring wells as far as 1,600 feet southwest of Optical Coating Laboratory's property boundary. This groundwater supports domestic, agricultural, and industrial water supplies.

In 1990, a groundwater extraction and treatment system began operation. As of the end of 1999, the extraction system consists of a network of 21 extraction wells in three of the water-bearing zones. The treatment system includes air strippers containing activated carbon to treat the air prior to emitting it to the atmosphere. The treatment system extracts groundwater at rates of up to 350 gallons per minute. In January 2000, a new vacuum extraction system is expected to be operational. This system will apply a vacuum to selected extraction wells to enhance the recovery of contaminants.

Former Naval Air Station Properties

The Federal government built the Santa Rosa Naval Auxiliary Air Station as a military base during World War II. The primary purpose of the station was to train pilots. The base was used during World War II and the Korean War, and was decommissioned in the 1950s. The property was then transferred to the General Services Administration, which in turn sold off much of the

former air station to private owners. The largest portion of the base was operated as an airport until 1992.

Potential contamination sources at the former air station include 36 underground storage tanks, a sewage treatment facility, oxidation beds, underground oil-water separators, sumps, an incinerator, above ground tanks, drum storage areas, three concrete vaults, and at least two landfills. The U.S. Army Corps of Engineers has been investigating and cleaning up contamination that resulted from past air station activities. The California Water Quality Control Board works with the Army Corps of Engineers and current property owners to investigate and clean up this area. Although some remediation has occurred, including the removal of several underground storage tanks and related soil, portions of the property remain under investigation.

Other Contaminated Sites

The remaining known contaminated sites in the vicinity of the Southwest Plan Area are described below. Project areas that have not been investigated may also exhibit soil and groundwater contamination; therefore, this list is probably not exhaustive.

- ***Fouche Auto Wreckers, 2290 Dutton Avenue:*** This site is a former wrecking yard with a history of unauthorized waste releases, including waste oil and other petroleum products. A workplan to investigate effects on groundwater has been ordered. Regional Water Quality Control Board staff are proposing to investigate the site under a grant arrangement with the U.S. Environmental Protection Agency.
- ***Posada, Juan, 840 Brittain Lane:*** In 1992, the Santa Rosa Fire Department observed soil staining (apparently waste oil) at the site. In 1993, the California Water Quality Control Board requested a workplan to investigate the extent of contamination. No plan has been submitted.
- ***Prestige Lincoln Mercury, 2979 Corby Avenue:*** Two 1,000-gallon underground gasoline storage tanks and one 100-gallon underground diesel storage tank were removed in 1989. Contaminated soil was overexcavated in 1991. Nine monitoring wells were installed between 1991 and 1998. Previously stockpiled contaminated soil was transported to a landfill and a Corrective Action Plan was submitted in March 1999. The plan is under review.
- ***J.E. McCaffrey Company, 365 Todd Road:*** The site had 14 underground storage tanks. In 1991, they were tested and determined to be tight. A subsequent site investigation included 13 soil borings and 27 soil samples. Soil samples contained gasoline, diesel, and

BTEX. The 14 underground storage tanks were removed with extensive overexcavation. Four new tanks have been installed. A groundwater investigation is required.

Relevant Plans and Policies

Sonoma County

Sonoma County established a variety of policies pertaining to hazardous materials management in its *General Plan*.³ These policies include the following, among others:

Objective PS-4.2 Regulate the transport, storage, use and disposal of hazardous materials in order to reduce the risks of damage and injury from hazardous materials to acceptable levels.

PS-4c: Require a use permit for any commercial or industrial use involving significant quantities of hazardous materials. Hazardous materials management plans shall be required as a condition of approval for such permits.

Sonoma County also established a variety of policies pertaining to hazardous waste management in its *Hazardous Waste Management Plan*.⁴ These policies include the following, among others:

Policy 1: The Plan encourages and promotes practices and technologies that will, in order of priority:

- Reduce the use of hazardous and toxic substances and generation of hazardous wastes at their source.
- Recover and recycle the remaining wastes for use.
- Treat those wastes not amenable to source reduction or recycling....
- ...encourage all hazardous waste generators...to adopt and implement the following hierarchy of waste management practices:
 - Source reduction
 - Reuse and recycling onsite
 - Reuse and recycling offsite
 - Treatment onsite
 - Treatment offsite
 - Incineration
 - Secure disposal of recycling and treatment residuals in a repository.

Objective 1-3: Establish new source performance standards as part of land use permits for new businesses and implement through county and city ordinances.

Policy 2: The Plan supports hazardous waste management which will:

- Emphasize the importance of safe practices in handling hazardous wastes....

- Prevent degradation of air, surface and groundwater, and soils.
- Prevent further pollution of already contaminated areas and provide remedial action of these sites....

Objective 2-4: Promote programs to prevent new contamination. Develop and implement new source review procedures and standards to ensure that discharges of toxic chemicals do not impair the air, surface or groundwater, or soils.

Policy 10: The Plan recognizes that governmental planning and decision making must consider the total costs of waste management. Consideration by government of any existing enterprise, future expansion, or new development must address short and long term costs to the community and appropriate mitigations must be required.

City of Santa Rosa

The City of Santa Rosa established a variety of policies pertaining to hazardous materials and waste management in its *General Plan*.⁵ These goals and objectives include the following, among others:

Implementation Actions and Objectives: Use existing regulations and procedures and require elimination of hazardous materials or...otherwise mitigate potential impacts from those materials.... The effort should include:

- Identification of toxic disposal or leakage sites and systematic cleanup of such sites...;
- Assurance that hazardous materials used in business and industry are properly handled and transported and that information on their handling and use is available to the fire protection and other safety agencies;
- Support of and coordination with the *Sonoma County Hazardous Waste Management Plan*.

The City of Santa Rosa also established a variety of policies pertaining to hazardous materials and waste management in the *Southwest Area Plan*.⁶ These goals and objectives include the following, among others:

Objective 1.1: Minimize the potential for human health risks associated with the use of groundwater for potable sources.

Policies

- 1.1.1 Potable water for all future development in the study area shall be supplied by the municipal water system.
- 1.1.2 Encourage existing uses to connect to the municipal water system to avoid potential human health risks....

Objective 1.2: Prevent the spread of groundwater contamination.

Policies

- 1.2.1 When undergrounding utilities in potential problem areas incorporate measures which reduce, minimize, and ideally prevent, migration of contaminated groundwater. Such measures could include, but are not limited to:
- a) Installation of utilities above ground where feasible;
 - b) Replacing excavated soils with soils of lower permeability;
 - c) Installation of barriers within utility trenches;
 - d) Lining storm drains and sewers to prevent infiltration.
- 1.2.2 Discourage the construction of new wells which may act to spread or draw contaminated groundwater.

Objective 1.3: Minimize, and where feasible, avoid exposure of construction crews to hazardous materials.

Policy

- 1.3.1 Develop a Health and Safety Measures Plan tailored to project needs. Such measures could include but are not limited to:
- a) Health and safety training for all workers and supervisory personnel; and
 - b) Use of protective equipment/clothing; and
 - c) Dust suppression measures.

Objective 2.1: Identify and remediate existing hazardous sites.

Policies

- 2.1.1 Continue to work cooperatively with responsible agencies to identify toxic hazards and establish remediation programs.
- 2.1.2 Expedite planning and building permit approvals for remediation projects.
- 2.1.3 Restrict development on sites with documented hazardous materials, where such materials present a health risk until such time as a remediation plan has been approved by regulatory agencies and funding for the remediation effort is assured.

Objective 2.2: Prevent the formation of new hazardous sites.

Policies

- 2.2.1 Utilize the existing regulatory mechanisms to prevent the formation of new hazards.
- 2.2.2 Continue to educate and inform the public regarding disposal of household hazardous wastes, and impacts resulting from contamination entering the storm drainage system.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

For this analysis, an impact is considered significant if it would create a substantial hazard to the public or the environment through routine hazardous materials use or disposal, reasonably foreseeable upset or accident conditions, or exposure to existing contaminants in soil, groundwater, or structures.

Development Assistance Program

The Development Assistance Program would finance activities such as land acquisition, deteriorated structure removal, site preparation, and soil and groundwater remediation. It could result in potential impacts related to hazardous materials by stimulating, or removing impediments to, development and construction activities, particularly activities such as deteriorated structure removal and site preparation. Future development could also involve the handling and storage of hazardous materials.

Impact 3.1.8-1

During the earth-moving phases of construction, site workers and the public could be exposed to hazardous contaminants in soil and groundwater. (PS)

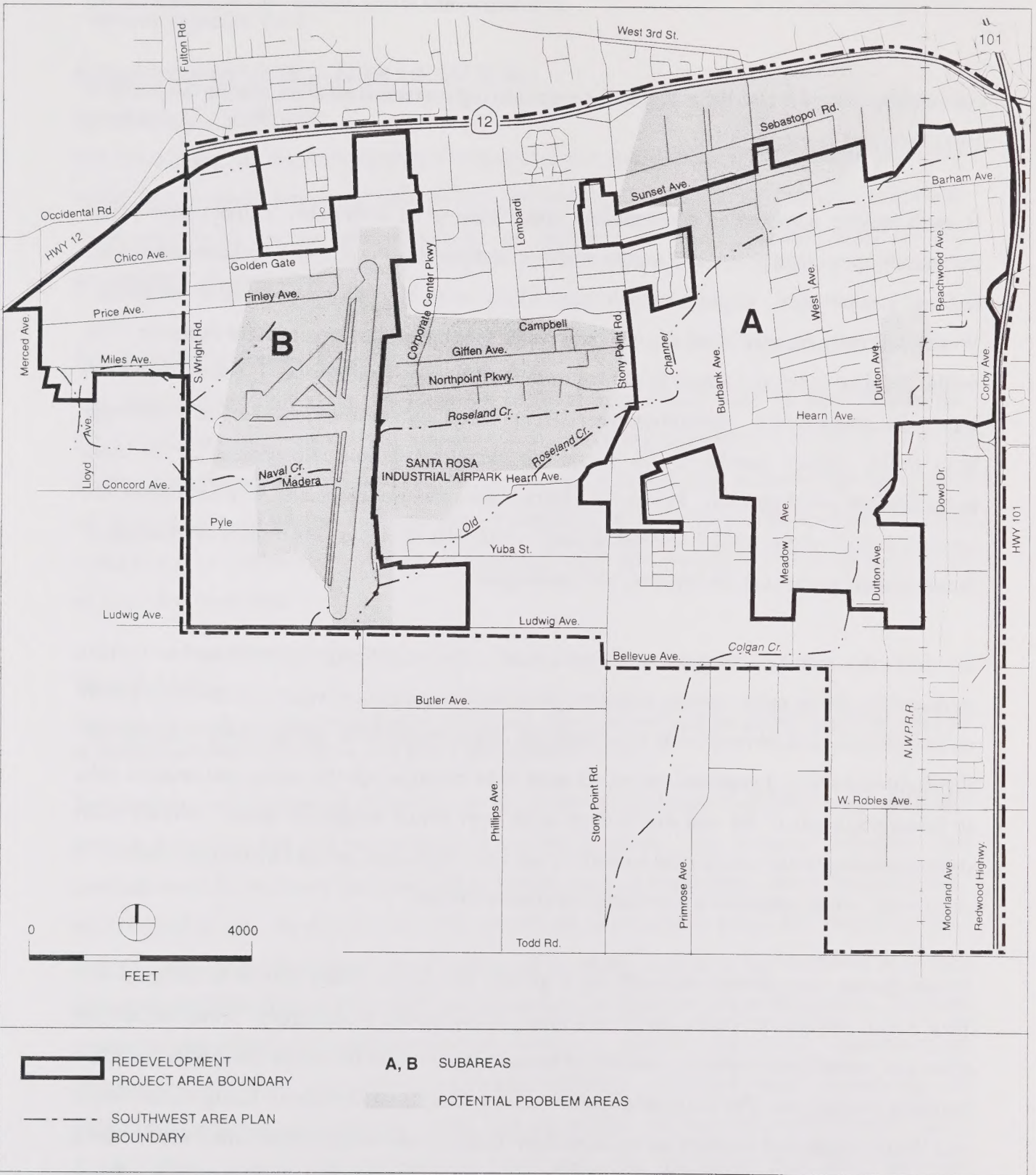
Development in Redevelopment Subareas A and B and the Southwest Plan Area in general would involve disturbing soil and groundwater at various locations. For example, excavation and grading would be necessary to install infrastructure, such as water lines, sewer lines, electrical utilities, and roads. New residential and commercial development would also require grading and, in some cases, excavation. As described above, many parcels in the Southwest Plan Area have been studied sufficiently to determine that soil and groundwater are contaminated. The most common contaminants are petroleum hydrocarbons (e.g., gasoline and diesel), volatile organic compounds (solvents), and methyl-*t*-butylether (MTBE). In many cases, monitoring and remediation activities are underway. Also, some areas have not been fully investigated. Figure 3.1.8-1 shows general potential problem areas within the Southwest Plan Area, including Redevelopment Subareas A and B. Construction activities within the problem areas may result in the exposure of workers and contractors from contaminated soil, groundwater or volatile

compounds. There is also the potential for encountering contaminated areas outside the problem areas indicated in Figure 3.1.8-1.

If earth-moving activities in contaminated areas were to be undertaken without appropriate safeguards, they could potentially expose workers, and possibly the public, to contaminants in the soil and groundwater. Exposure would most likely occur through skin contact or inhalation. Workers directly engaged in on-site activities would face the greatest potential for exposure. The public could be exposed if access to the site were insufficiently controlled or if contaminated soil were to become airborne. Hazardous materials exposure could cause various short-term and long-term health effects specific to the particular chemicals present (if present in sufficient concentrations and durations). Petroleum hydrocarbons are often associated with dermatitis, and solvents can affect the central nervous system, sometimes acting as depressants or anesthetics. Some contaminants, such as benzene, are carcinogenic.

To ensure that individual projects would not create a substantial human health hazard to workers or the public during earth-moving activities, potential soil and groundwater contamination at sites to be developed would need to be identified and characterized prior to beginning construction. Contaminated soil and groundwater would need to be managed appropriately, and residual risks to future occupants of the site would need to be kept within acceptable levels. Without such measures, construction could pose hazards to workers, the public, or the environment, which, if substantial, could constitute a potentially significant impact.

If remediation were deemed necessary (as is already the case for many parcels in the Southwest Plan Area), worker and public health and safety requirements would apply. Potential adverse effects of remediation would be minimized through legally required safety and hazardous waste handling precautions. For hazardous waste workers, California Division of Occupational Safety and Health regulations mandate an initial 40-hour training course and subsequent annual training review. Additionally, site-specific training would be required for some workers. These measures, along with the application of cleanup standards subject to review by responsible agencies, would serve to protect public health and the environment during site remediation, thereby minimizing potential adverse effects.



SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN

FIGURE 3.1.8-1: POTENTIAL PROBLEM AREAS WITHIN THE SOUTHWEST PLAN AREA

To the extent that the Redevelopment Plan could facilitate the removal of existing contaminants from soil or groundwater, it could be beneficial over the long term. Contaminant removal could reduce potential health threats and prevent individuals from encountering these contaminants in the future. Properly handling and disposing of contaminated soil and groundwater would protect the environment and prevent potential future adverse health or safety effects.

Mitigation Measure 3.1.8-1

Prior to beginning earth-moving activity at any particular location, each project applicant shall characterize the soil and groundwater conditions of the area to be disturbed. In many cases, site conditions have already been characterized. Where sufficient information is not already available to determine the potential for soil and groundwater contamination, the project applicant will retain a qualified environmental specialist (e.g., a Registered Environmental Assessor or similarly qualified individual) to prepare a Phase I Environmental Site Assessment. The assessment will list current and past uses of the site, review environmental agency databases and records, report site reconnaissance observations, and summarize potential contamination issues, including any that warrant further investigation. The project applicant will submit the Phase I Environmental Site Assessment to the California Water Quality Control Board, North Coast Region; the Sonoma County Health Services Department or Department of Emergency Services; or the Santa Rosa Fire Department, as appropriate.

If determined to be necessary as a result of the Phase I Environmental Site Assessment or other information already available for a site, the project applicant will prepare a Phase II Environmental Site Assessment. Soil and groundwater samples will be collected and tested as directed by a qualified environmental specialist (e.g., a Registered Environmental Assessor or similarly qualified individual). Sampling will extend at least as far as the areas and depth proposed for excavation. The samples will be analyzed to identify and quantify any suspected soil or groundwater contamination. In some cases, existing soil and groundwater sampling results may be sufficient to characterize the extent of potential contamination. The project applicant will submit the Phase II Environmental Site Assessment to the California Water Quality Control Board, North Coast Region; the Sonoma County Health Services Department or Department of Emergency Services; or the Santa Rosa Fire Department, as appropriate.

Soil and groundwater monitoring and remediation will be completed as deemed necessary to protect future occupants of the site, neighboring properties, and groundwater quality. The project applicant will evaluate the potential human and environmental risks associated with the existing contamination and proposed remediation strategies and work with regulatory agencies to select a prudent approach to address site conditions consistent with foreseeable future uses. For example, if residential uses are proposed for a contaminated site, cleanup standards will be based on human health risk standards using residential exposure parameters. The project applicant will consult with the California Water Quality Control Board, North Coast Region; the California Department of Toxic Substances

Control; the Sonoma County Health Services Department or Department of Emergency Services; or the Santa Rosa Fire Department, depending on which agency has jurisdiction over the site. Possible remediation strategies could include, for example, natural attenuation, encapsulation, aeration, bioremediation, soil-vapor extraction, or off-site disposal. Remediation plans will address the replacement of excavated soils with soils of lower permeability, the installation of barriers within trenches, and the lining of storm drains and sewers to prevent infiltration.

If work is undertaken at a contaminated site, the applicant will prepare a Site Safety and Health Plan (a California Division of Occupational Safety and Health requirement for work at hazardous waste sites). The plan will be prepared in accordance with regulatory requirements and the *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*.⁷ It will identify potential hazards, material handling procedures, dust suppression measures, necessary personal protective clothing and devices, and appropriate monitoring equipment. In addition to measures that protect on-site workers, the plan will include measures to minimize public exposure to contaminated soil or groundwater. Such measures will include dust control, appropriate site security, restriction of public access, and posting of warning signs, and will apply from the time of surface disruption throughout the completion of earthwork construction. (I)

Mitigates:	Impact 3.1.8-1 (I)
Implementation:	Prior to beginning earth-moving activity at any particular development site.
Responsibility:	Project Sponsor/Contractor
Monitoring:	City of Santa Rosa Fire Department and Regional Water Quality Control Board for incorporated areas and Sonoma County Health Department and Regional Water Quality Control Board for unincorporated areas.

Impact 3.1.8-2

Demolition, removal or renovation could disturb hazardous materials in existing buildings and building components, resulting in human or environmental exposure. (PS)

The Development Assistance Program could encourage and facilitate the demolition, removal or renovation of some existing buildings and other facilities in the Southwest Plan Area. Building components in older facilities could contain hazardous materials, such as asbestos, PCBs, lead, or mercury. As discussed below, such materials could pose health and safety hazards to individuals exposed to them, and if released, they could cause environmental degradation.

Asbestos can be found in fire-proofing, sprayed-on acoustic ceiling materials, thermal insulation, wall and ceiling texture, floor tiles, and other materials in existing buildings and facilities, particularly if constructed prior to the 1970s. For example, a 12-inch water supply line in the

Hearn Avenue alignment was constructed of material containing asbestos fiber. This pipeline has been abandoned in place. Only small segments have been removed to accommodate lateral water lines that cross the abandoned line.⁸ Asbestos poses health hazards when inhaled; therefore, friable (easily crumbled) asbestos is potentially hazardous. Non-friable asbestos and encapsulated friable asbestos do not pose substantial health risks. Upon building renovation or demolition, asbestos fibers (if any are present) could be released to the environment unless proper precautions are taken. Government regulations limit asbestos emissions from asbestos-related demolition and construction activities, and specify precautions and safe work practices that must be followed to minimize the potential release of asbestos fibers.

Building components containing PCBs, lead, or mercury could also be found in areas to be demolished or renovated. PCBs were once common components of electrical transformers and fluorescent light ballasts. They are now regulated under the federal Toxic Substances Control Act. In sufficient concentrations, the metals lead and mercury are toxic. They are regulated as hazardous wastes.

Applicable health and safety requirements could minimize the risks of handling asbestos, PCBs, lead, mercury, and other hazardous materials that could be present, unless they fail to be identified adequately prior to demolition or renovation. If any unidentified hazardous materials were to remain in existing facilities when demolition or renovation occurred, these hazardous materials could create worker health hazards, result in environmental releases of these hazardous materials, or result in inappropriate waste disposal. In this way, the Development Assistance Program could create a substantial hazard to the public or the environment through the mishandling or disposal of hazardous wastes. Appropriate hazardous materials surveys and safety precautions would be needed to avoid the potentially significant impact of possible exposure to hazardous materials in existing facilities and building components.

Mitigation Measure 3.1.8-2

Prior to commencing the demolition, removal or substantial renovation of any existing building or facility in the Southwest Plan Area, each project applicant will retain a qualified environmental specialist (e.g., a Registered Environmental Assessor or similarly qualified individual) to inspect the building or facility. The specialist will identify any asbestos, PCBs, mercury, lead, or other hazardous materials present. If found at levels

that require special handling, these materials will be managed as required by law and according to federal and state regulations and guidelines, including those of the Bay Area Air Quality Management District, the California Division of Occupational Safety and Health, the California Department of Toxic Substances Control, the Sonoma County Health Services Department, and any other agency with jurisdiction over these hazardous materials. (I)

Mitigates:	Impact 3.1.8-2 (I)
Implementation:	Prior to demolition or substantial renovation of any building or facility.
Responsibility:	Project Sponsor
Monitoring:	Santa Rosa Department of Community Development

Impact 3.1.8-3

Demolition or removal of structures containing hazardous materials could reduce potential health threats and prevent individuals on and off site from encountering these materials in the future. This would be a beneficial impact. (B)

To the extent that redevelopment would involve removing hazardous materials from existing facilities, it could be beneficial over the long term. The removal of such materials could reduce potential health threats. Properly handling and disposing of contaminated materials as explained under Impact 3.1.8-2 would protect the environment and prevent potential future adverse health or safety effects.

Mitigation Measure 3.1.8-3

None required. See Mitigation Measure 3.1.8-2.

Impact 3.1.8-4

Project development as assisted through the Development Assistance Program would increase the handling, storage, and transportation of hazardous materials by area residents, commercial businesses, and industries. (I)

Storage and Handling

Hazardous materials are handled and stored routinely by industries, businesses, and households; therefore, project-related new and expanded industries, commercial businesses, and households would also handle and store hazardous materials. The types of materials associated with each of these activities varies. Household hazardous materials use is relatively predictable. Industrial and business-related hazardous materials use, on the other hand, is less predictable because it depends on the specific industry or business considered. Common hazardous materials include oils (e.g.,

motor oil and hydraulic oil), fuels (e.g., gasoline and diesel), paints (both latex and oil-based), solvents (e.g., degreasers, paint thinners, and aerosol propellants), acids and bases (such as many cleaners), disinfectants, metals (e.g., thermometers, batteries, and photography chemicals), and pesticides. In most circumstances, the potential risks posed by hazardous materials use and storage are primarily limited to the immediate vicinity of the materials.

Although many types of hazardous materials are used by households, these materials are typically familiar products, such as motor oil, paint, and bleach. Commercial products are labeled to inform users of potential risks and to instruct users in appropriate handling procedures. Although households are relatively less regulated than businesses and industries (discussed below), the risks of hazardous materials use at new residences constructed under the project would be similar to those in other residential areas. Because the home use of common household hazardous materials is typically considered to pose an acceptable risk, the residential portion of redevelopment would not be expected to create substantial public or environmental hazards.

Commercial businesses typically use hazardous materials similar to those found in residential areas. In addition, some businesses, such as dry cleaners, rely on specific hazardous materials for commercial purposes. Other businesses, such as supermarkets and gas stations, stock hazardous materials for sale to consumers. The Santa Rosa Fire Department and the Sonoma County Department of Emergency Services oversee many hazardous materials requirements. They oversee the preparation and implementation of hazardous materials business plans, underground storage tank programs, aboveground petroleum storage tank spill prevention control and countermeasure plans, risk management plans, and fire safety plans. Additionally, businesses are regulated as employers and, therefore, are required to ensure employee safety. Specific requirements include identifying hazardous materials in the workplace, providing information regarding hazards to workers that handle hazardous materials, and adequately training workers to handle these materials safely. This combined regulatory supervision would ensure that the project-related use of hazardous materials by businesses would be within acceptable risk levels and, therefore, that these businesses would not be expected to create substantial public or environmental hazards.

Some industrial activities may involve greater hazardous materials handling and storage than commercial businesses or households. As with hazardous materials use by households and commercial businesses, however, the risks posed by industrial operations would typically affect only the immediate vicinity of such use. In the event that a specific business or industry could handle hazardous materials that pose substantial risks to the neighboring community, state and federal regulations require additional oversight. For example, if facilities handle acutely hazardous in quantities above certain planning thresholds, they are required to comply with the U.S. Environmental Protection Agency's Accidental Release Prevention program, prepare Risk Management Plans, and in some cases, comply with additional requirements. In this way, regulatory oversight minimizes the risks posed by hazardous materials use. Therefore, the project would not be expected to create substantial public or environmental hazards, including hazards related to upset conditions.

Transportation

Hazardous materials used throughout the Southwest Plan Area would be transported to, from, and through the area in motor vehicles. The probability of an accident during transport can be evaluated by reviewing data compiled by the California Department of Transportation. On state highways, the California Department of Transportation has found that about 3.56 vehicle accidents occur per million miles traveled (assuming urban streets with four or more undivided lanes).⁹ These data apply to all types of vehicles and do not distinguish between accidents that involve hazardous materials and those that do not. Vehicles carrying hazardous materials in the Southwest Plan Area and vicinity would be expected to experience similar accident probabilities. However, only a fraction of the accidents involving vehicles carrying hazardous materials would be expected to affect the integrity of the containers on board. Because few accidents involving vehicles carrying hazardous waste would involve a release of those materials, the potential for vehicle accidents involving hazardous waste to occur in the Southwest Plan Area would be less than 3.56 accidents per million miles traveled.

To minimize the potential for accidental spills of hazardous waste during vehicle transit (as opposed to hazardous materials transit as discussed below), suppliers and transporters are required to follow U.S. Department of Transportation and California Department of Toxic Substances

Control regulations for packaging and handling hazardous waste. Prior to off-site shipment by licensed hazardous waste haulers, wastes are to be packaged in drums and containers that meet U.S. Department of Transportation requirements. Because of these strict requirements, containers are unlikely to release their contents in the event of an accident, and the consequences of a vehicle accident involving hazardous waste in the Southwest Plan Area would likely be minimal.

Common carriers, such as Federal Express and United Parcel Service, deliver many hazardous materials packages. These carriers would transport some hazardous materials through the Southwest Plan Area whether or not they would deliver to particular locations. To minimize the potential for accidental spills of hazardous materials during transit, suppliers and transporters are required to follow U.S. Department of Transportation and U.S. Postal Service regulations for packaging and handling. While these containment requirements are not as stringent as those for hazardous waste, they would reduce the possibility of a release in the Southwest Plan Area.

Because the California Department of Transportation accident rate data cited above indicate that motor vehicle accidents involving hazardous materials and waste are infrequent events, and because packaging requirements limit the potential consequences of these possible accidents, the project would not create substantial public or environmental hazards, including hazards related to upset conditions. In summary, project-related industries, commercial businesses, and households would not be expected to create substantial public or environmental hazards through the handling, storage, or transportation of hazardous materials, and the impact of the project would be considered less than significant.

Mitigation Measure 3.1.8-4

None specifically required for the Redevelopment Plan project.

Impact 3.1.8-5

Project development would increase the generation and disposal of hazardous wastes by area residents, commercial businesses, and industries. (I)

Industries, commercial businesses, and households generate hazardous waste as a routine consequence of handling hazardous materials. The U.S. Environmental Protection Agency considers hazardous waste to be a form of pollution because the recycling, treatment, and disposal

of hazardous wastes results in air emissions and water discharges at recycling and treatment facilities, and in residuals that must be disposed of in hazardous waste landfills.¹⁰ Industries and commercial businesses are subject to hazardous waste regulations set forth in Title 22 of the California Code of Regulations. Households are exempt from many of these hazardous waste handling requirements. These regulations are intended to minimize the potential hazards to humans and the environment posed by recycling, treating, and disposing of hazardous wastes. These environmental effects occur at recycling, treatment, and disposal facilities typically located far from where the wastes are generated. No hazardous waste recycling, treatment, or disposal facilities are known to have been specifically proposed in the Southwest Plan Area.

Although hazardous waste disposal is a necessary consequence of hazardous waste generation, the preferred approach to managing hazardous wastes is to generate less of it. This approach is consistent with the Sonoma County *Hazardous Waste Management Plan*. Furthermore, all hazardous waste generators, regardless of size, must certify with each waste shipment that they have, at a minimum, made a good faith effort to minimize their hazardous waste generation and have selected the best management method that is available and affordable. Relatively large hazardous waste generators are required to prepare and implement hazardous waste minimization plans. Relatively small hazardous waste generators are not required to prepare such plans.

Historically, many small businesses have found complying with hazardous waste regulations to be difficult and expensive.¹¹ These waste generators have been known to store hazardous wastes indefinitely, flush wastes down sewers, combine hazardous wastes with nonhazardous solid waste for disposal, and pour wastes on the ground.¹² Households have faced similar disposal challenges. To provide households and small quantity business waste generators with more convenient and more affordable hazardous waste management options, the Sonoma County Waste Management Agency has developed programs specifically targeted to assist households and small quantity commercial waste generators with their waste disposal needs. Programs allow hazardous waste generators to drop off wastes on designated days or have wastes picked up by appointment. These household and small quantity generator programs would continue to be available to serve the new businesses and households proposed for the Southwest Plan Area. In this way, programs would be in place to minimize the production and disposal of wastes in a manner that creates public and

environmental hazards. Because redevelopment would not create a substantial hazard through the disposal of hazardous wastes, this impact would be considered less than significant.

Mitigation Measure 3.1.8-5

None specifically required for the Development Assistance Program

Public Projects Program

Soil and groundwater contamination has been identified at numerous locations within, and in the vicinity of, the Southwest Plan Area. In several cases, contaminant plumes have migrated through groundwater aquifers beyond the boundaries of their original properties, sometimes commingling with other plumes. In some cases, contamination is associated with buried utilities, such as sewers that follow area streets. For these reasons, the construction of public projects, such as roads, water supply facilities, sanitary sewers, and storm drains could encounter contaminated soil and groundwater. Therefore, Impacts 3.1.8-1 and 3.1.8-2 and Mitigation Measures 3.1.8-1 and 3.1.8-2 would apply to the Public Projects Program.

Housing Program

The Housing Program would provide assistance to build, improve and preserve low and moderate income housing. By stimulating development and construction, these activities could result in impacts related to contaminated soil and groundwater, hazardous materials in existing facilities, and future use of hazardous materials and generation of hazardous wastes by households. Therefore, Impacts 3.1.8-1, 3.1.8-2, 3.1.8-4, 3.1.8-5, discussed in the context of the Development Assistance Program above, would apply equally to the Housing Program. Mitigation Measures 3.1.8-1 and 3.1.8-2 would also apply.

Notes - Hazardous Materials

1. U.S. Department of Housing and Urban Development, *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*, June 1995, revised 1997.
2. California Department of Toxic Substances Control, *State of California Hazardous Waste and Substances Sites List*, April 1998, pp. 276-287.
3. Sonoma County, *Sonoma County General Plan*, March 23, 1989, revised November 1, 1994, pp. 257-258.

4. Sonoma County, *Sonoma County Hazardous Waste Management Plan*, May 23, 1989, revised November 5, 1991, pp. 2-1 to 2-8.
5. City of Santa Rosa, *General Plan: Santa Rosa 2010*, adopted July 1991, pp. IX-8 and IX-9.
6. City of Santa Rosa, *Southwest Area Plan*, June 21, 1994, pp. 75-78.
7. National Institute for Occupational Safety and Health, U.S. Occupational Health and Safety Administration, U.S. Coast Guard, and U.S. Environmental Protection Agency, *Occupational Safety and Health Guidance Manual for Hazardous Waste and Site Activities*, 1985.
8. EIP Associates, *Hearn Avenue Reconstruction & Improvement Project Draft Subsequent Environmental Impact Report*, prepared for the City of Santa Rosa Department of Community Development, May 1995, pp. 3-35 and 3-36.
9. California Department of Transportation, *1998 Accident Data on California State Highways (Road Miles, Travel, Accidents, Accident Rates)*, 1999.
10. U.S. Environmental Protection Agency, *Facility Pollution Prevention Guide*, 1992.
11. Association of Bay Area Governments, *The Disposal of Hazardous Waste by Small Quantity Generators: Magnitude of the Problem*, June 1985.
12. Association of Bay Area Governments, *Toxics Away! The Alameda County Pilot Collection Program for Small Quantity Generators of Hazardous Wastes*, April 1988.

3.2 PHYSICAL/BIOLOGICAL ISSUES

3.2.1 SOILS, GEOLOGY AND SEISMICITY

INTRODUCTION

Rationale

Consideration of soils, geology and seismicity conditions is an important aspect of all development and redevelopment projects in the nine counties surrounding San Francisco Bay (the Bay Area). This includes areas like the Santa Rosa Plain where Southwest Santa Rosa Redevelopment Subareas A and B are located adjacent to creeks that drain to the Llano de Santa Rosa and the Russian River. Although most projects, including the one examined in this SEIR, have little or no effect on the geology of the Bay Area, any project involving construction will have some effect on soils and topography; and all will be affected by certain geologic events, such as earthquakes or erosion. The purposes of reviewing the soils, geology and seismicity information of any project are: (1) to identify potentially hazardous conditions; (2) to identify potential impacts of the proposed project; and (3) to provide techniques to reduce, eliminate or avoid these conditions and impacts.

Major Sources of Information

The Redevelopment Plan Subareas are covered by several regional studies, published by federal, State and local agencies (United States Geological Survey, California Division of mines and Geology, Association of Bay Area Governments, *etc.*). Other major sources of information include maps and tables in the Safety Element of the General Plan *Santa Rosa 2020*, the *Soil Survey of Sonoma County*, published in 1972 by the United States Department of Agriculture Natural Resource Conservation Service, previous geotechnical investigations in the Southwest Area, the 1994 *Southwest Area Plan EIR*, and site reconnaissance conducted for preparing this SEIR. No geotechnical investigation has been prepared specifically for the Redevelopment Subareas, but preliminary soils investigations exist for numerous properties within the two Subareas.

SETTING

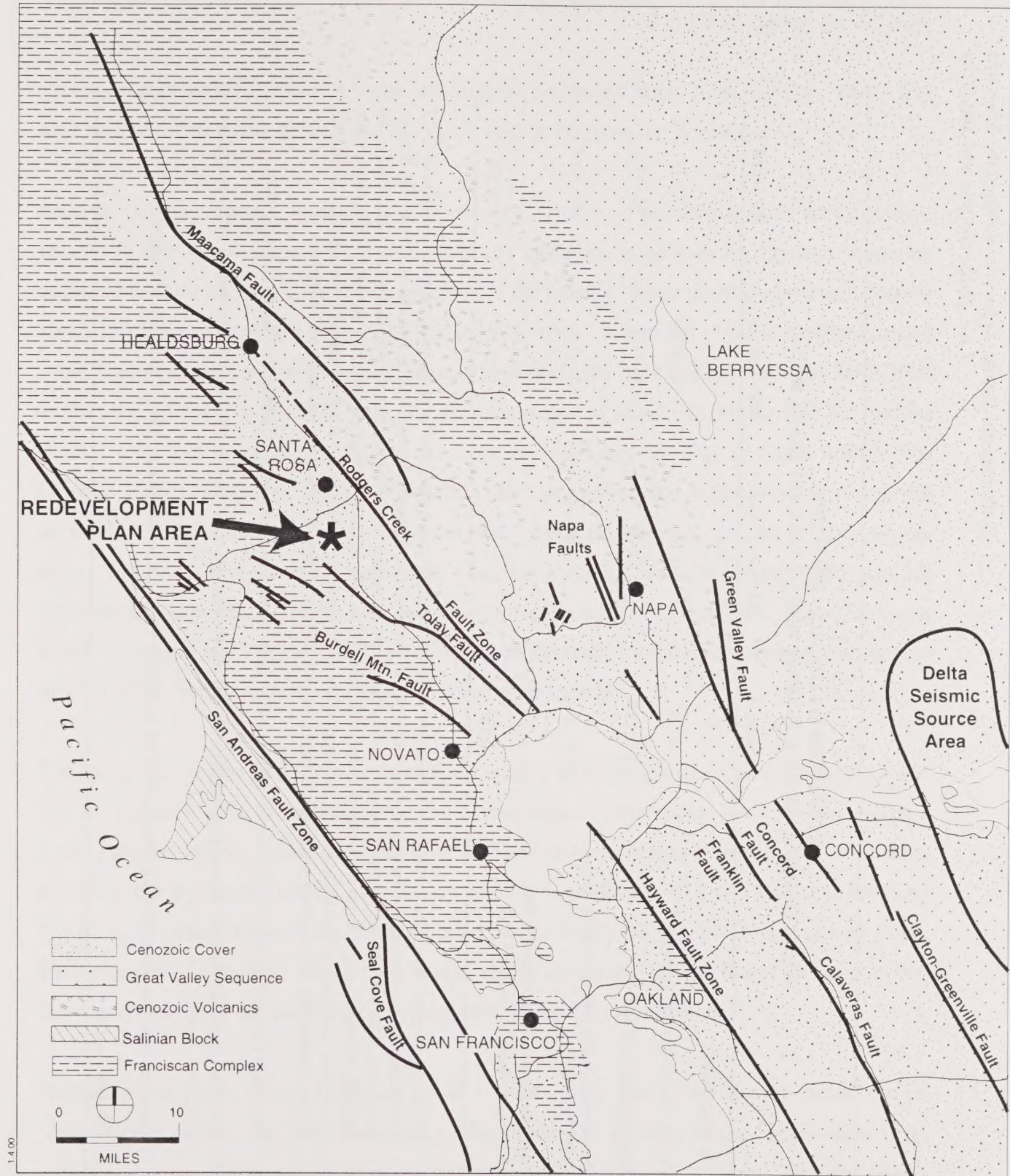
Regional Geology

The regional geologic framework of the Bay Area (Figure 3.2.1-1 of this SEIR), and Sonoma County in particular, can be understood through the theory of plate tectonics. Earth's mantle is composed of several large plates that move relative to each other. The San Andreas fault zone is at the junction of two such plates. The Pacific plate, on the west side of the zone, is moving north relative to the North American plate on the east side. One of the results of this movement is the regional rock deformation that is expressed in the general northwest trend of valleys and ridges in Sonoma County. This is visible, for example, in the orientation of the Rodgers Creek fault and the Sonoma Mountains, northeast of the Llano de Santa Rosa. Another result of plate movement, discussed below, is the regional seismicity that Sonoma County has in common with the rest of the Bay Area.¹

All of the geologic formations in the Santa Rosa area are on the North American plate. The oldest bedrock formations exposed in the area are the Petaluma claystone/mudstone and the Sonoma Volcanics (lava flows and volcanic ash), both of the Tertiary period (deposited between 7 million and 1.6 million years ago).² Gravels, sands, silts and clays of the major alluvial fans in the northwest-trending valleys are younger, of the Quaternary in age (the last 1.6 million years).³ Fluvial sand, silt and clay was deposited in local streams cut into the alluvial fans during the latest several thousand years of this period.⁴

Regional Seismicity

The regional seismic context is important because the forces that will affect the Southwest Plan Area and Redevelopment Subareas are regional in nature: that is, they probably will be generated outside the Redevelopment Subareas, outside the City, and, possibly, outside the County. However, the effects of these forces must be accommodated within new development in compliance with regulations and guidelines established by the State and the City. Figure 3.2.1-1 is a regional geologic map of the Bay Area, showing the general distribution of the major groups of rock units, the approximate position of the major fault zones, and the location of the Redevelopment Plan Subareas in relation to these features. Table 3.2.1-1 contains the estimated



SOURCE: California Division of Mines and Geology and U.S. Geological Survey, 1994

SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN
FIGURE 3.2.1-1: REGIONAL GEOLOGIC MAP

TABLE 3.2.1-1
ESTIMATED MAXIMUM PARAMETERS
FOR MAJOR KNOWN FAULTS AFFECTING SOUTHWEST SANTA ROSA

Fault	Napa	Rodgers Creek	San Andreas	Hayward
Moment Magnitude ¹	6.7	7.1	7.1	7.3
Duration of Strong Shaking (seconds) ²	18-30	18-30	30-60	30-60
Maximum Intensity (MMI) ³	VII-VIII	IX-X	V-VI	VII-VIII
Peak Horizontal Accelerations in Rock and Stiff Soil (Gravity) ⁴	0.3 - 0.4	> .60	0.2 - 0.3	0.3 - 0.4
Approximate Distance and Direction from Southwest Santa Rosa to Fault (Miles)	20 E	3 E	17 W	31 SE

Notes:

1. For the purposes of describing the size of the design (or scenario) earthquake of a particular fault segment, **moment magnitude** (M_w) of the characteristic earthquake for that segment has replaced the concept of a maximum credible earthquake of a particular Richter magnitude. This has become necessary because the Richter Scale "saturates" at the higher magnitudes; that is, the Richter scale has difficulty differentiating the size of earthquakes above magnitude 7.5. The M_w scale is proportional to the area of the fault surface that has slipped, and thus, is directly related to the length of the fault segment. Although the numbers appear lower than the traditional Richter magnitudes, they convey more precise (and more useable) information to geologic and structural engineers.
2. Duration of ground motion at 0.5 g within 10 miles of the fault. Estimates based on relationships developed by Bolt, 1973.
3. Estimated Modified Mercalli Intensity damage level based on relationships developed by Perkins and Boatwright, 1995, or Richter, 1958 (San Andreas fault only).
4. Estimates based on relationships developed by Seed and Idriss, 1972, Joyner and Boore, 1981, Campbell and Sadigh, 1983.

Source: EIP Associates.

maximum parameters for known faults affecting the Southwest Santa Rosa vicinity. Terms that may be unfamiliar to the general public are defined in the glossary in endnote 1).⁵

Sonoma County, together with the rest of the Bay Area, is in one of the most active seismic regions in the United States. Each year, low and moderate magnitude earthquakes occurring within or near the Bay Area are felt by residents of the County. Since the mid-nineteenth century about 150 local earthquakes have been felt in the County. About ten of these temblors caused some damage in the County; those of 1906 and 1969 being the most destructive. The April 1906 earthquake on the San Andreas fault has been estimated at about Magnitude (M) 8.3 on the Richter scale and practically destroyed the business district of the City of Santa Rosa.⁶ The October 1969 earthquakes on the Healdsburg fault registered M5.6 and M5.7. No deaths occurred; several million dollars damage was done, including numerous breaks in water system pipes. More recently, the M4.9 earthquake along the Hayward fault (26 January 1986) was felt in Sonoma County, but no major damage was reported to utilities or facilities. The M7.1 Loma Prieta earthquake of 17 October 1989 on the San Andreas fault, caused severe damage through-out the Bay Area, but not extensively in the vicinity of Santa Rosa.

The major faults zones of the San Andreas Fault System were the sources of all these earthquakes, and are expected to be the sources of future earthquakes.⁷ Even though no known active fault traces pass through the Southwest Plan Area, it is necessary to design structures and facilities to withstand the anticipated effects of seismic vibration from distant, as well as nearby, sources.⁸ The City and County General Plan Safety Elements specifically identify the Rodgers Creek Fault, three miles east of the Plan Area, as a potential source of seismic activity that must be taken into consideration during the planning of development in the City and County.

Following the Loma Prieta earthquake, the United States Geological Survey estimated the probability of at least one large earthquake (Magnitude 7 or greater) in the San Francisco Bay region within the 30-year period between 1990 and 2020 at about 67 percent.⁹ On the Rodgers Creek fault and the Northern East Bay segment of the Hayward fault, the probabilities are estimated at about 22 and 28 percent, respectively, that a large earthquake would occur in this time-frame.¹⁰ Earthquakes of this magnitude are sufficient to create ground accelerations in

bedrock and in stiff unconsolidated sediments severe enough to cause major damage to structures and foundations not designed specifically to resist the lateral forces generated by earthquakes, and to underground utility lines not designed with sufficient flexibility to accommodate expected seismic ground motion.¹¹

There are several potentially active fault zones that could affect the redevelopment projects in the Southwest Plan Area. These include faults that are historically active (during the last 200 years), those that have been active in the geologically recent past (about the last 10,000 years, usually referred to as the Holocene epoch), and those that have been active at some time during the Quaternary geologic period (the last 1.6 million years). The San Andreas, Hayward, Napa, Healdsburg, and Rodgers Creek fault zones are all, at least partially, historically active. Parts of each of the major fault zones have been classified as Holocene or Quaternary depending on the age of the evidence of the most recent movement.¹²

The Rodgers Creek fault, about three miles to the east, is the closest known active fault to the Plan Area. Other nearby traces occur in the faults listed in Table 3.2.1-1 of this SEIR. A characteristic earthquake (M_w 7.3) on the Hayward fault probably is the largest that would affect the Plan Area, however, a characteristic earthquake (M_w 7.1) on the Rodgers Creek fault would be so much closer to Santa Rosa that its effects would be more severe. The characteristic earthquake of M_w 7.1 on the Rodgers Creek fault is capable of generating groundshaking intensities of Modified Mercalli Intensity (MMI) VIII and IX in Redevelopment Subarea A, and up to MMI VIII in Redevelopment Subarea B. Groundshaking intensities of MMI IX generally will not damage specially designed structures, but can cause moderate damage in structures of good workmanship, and heavy damage in ordinarily substantial buildings, foundations and underground utility lines. Groundshaking intensities of MMI VIII can cause light damage in structures of good workmanship, and moderate damage in ordinarily substantial buildings. For new buildings and infrastructure constructed to current California Building Code seismic-resistance standards, the damage potential is substantially lower.¹³

Other faults that exist in the vicinity of the City of Santa Rosa are pre-Quaternary in origin, generally being related to the Coastal thrust belt or the Coast Range thrust. They were active tens

of millions of years ago, but have shown no evidence of activity during the last 1.6 million years.¹⁴

Applicable Policies and Regulations

State Policies and Regulations

The major State legislation regarding earthquake fault zones is the *Alquist-Priolo Earthquake Fault Zoning Act*. In 1972, the State of California began delineating Earthquake Fault Zones (called Special Studies Zones prior to 1994) around active and potentially active faults to reduce fault-rupture risks to structures for human occupancy.¹⁵ The Act has resulted in preparation of maps delineating Earthquake Fault Zones to include, among others, recently active segments of the Healdsburg-Rodgers Creek fault. The Act provides for special considerations if developments are planned in areas adjacent to active or potentially active faults.¹⁶ The Redevelopment Plan Subareas are not crossed by Alquist-Priolo Earthquake Fault Zones, but if the splinter trace of the Rodgers Creek fault that may cross Redevelopment Subarea A is found to be active, an Earthquake Fault Zone would be established around it.

The major State regulations regarding geo-seismic hazards, other than surface faulting, are contained in Title 24, Part 2, *California Building Code* (CBC). The CBC applies to public buildings and a large percentage of private buildings in the State. It is based on the current Federal Uniform Building Code, but contains Additions, Amendments and Repeals that are specific to building conditions and structural requirements in the State of California.¹⁷ Local codes are permitted to be more restrictive than Title 24, but are required to be no less restrictive. Chapter 16 of the CBC deals with General Design Requirements, including (but not limited to) regulations governing seismically resistant construction. Chapters 18 and A33 deal with excavations, foundations, retaining walls, and grading, including (but not limited to) requirements for seismically resistant design, foundation investigations, stable cut and fill slopes, and drainage and erosion control. The Southwest Plan Area is in the CBC Seismic Zone 4, as is about 45 percent of the State, and therefore is required to meet the most stringent CBC construction standards.

The major State legislation regarding mineral resource zones is the *Surface Mining and Reclamation Act of 1975*. Part of the purpose of the act is to classify mineral resources in the State and to transmit the information to local governments which regulate land use in each region of the State. Local governments are responsible for designating lands that contain regionally significant mineral resources in the local General Plans to assure resource conservation in areas of intensive competing land uses. The law has resulted in preparation of Mineral Land Classification Maps delineating Mineral Resource Zones (MRZ) 1 through 4 for aggregate resources (sand, gravel and stone) in the City of Santa Rosa. The Southwest Plan Area is mapped as MRZ-1, an area where there is adequate information to indicate that no significant mineral deposits are present.

City of Santa Rosa Policies and Regulations

City policies that relate to resource conservation and protection within the Redevelopment Subareas as addressed in Natural Resource Conservation chapter and the Safety chapter of the Southwest Area Plan are intended to reduce or eliminate the impacts of development on waterways and groundwater. Issues of grading, erosion control and seismic safety issues are addressed in the City's General Plan and cover the Southwest Plan Area.

Southwest Plan Area/Redevelopment Subarea Characteristics

Topography¹⁸

The two Redevelopment Subareas are on the floor of the Santa Rosa Valley in the Sonoma Mountains of the California Coast Ranges. Elevations range from about 90 feet above mean sea level (+90 feet msl) along Ludwig Avenue in the southwest corner of Subarea B to about +150 feet msl near the intersection of Highways 101 and 12, in the northeast corner of Subarea A. Field inspection indicates that slopes across both Subareas are less than 1 percent, except along the banks of the drainage ways, where short slopes (less than 5 feet) are as steep as 50 percent.

Soils¹⁹

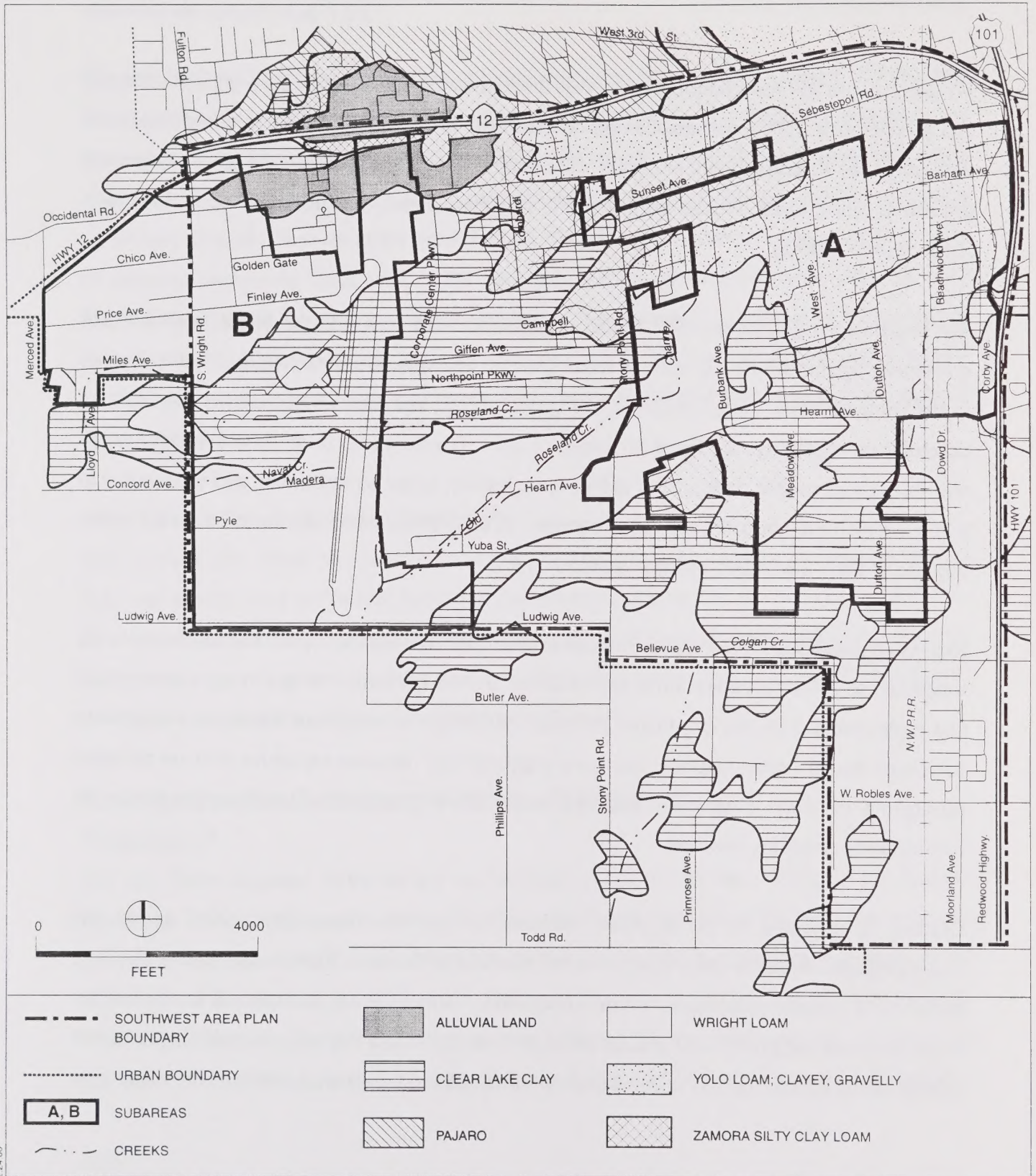
The soils of Sonoma County belong to two major groups which are further subdivided into 15 associations. The major soil groups are related to the substrate on which the soils have developed. One association is represented in the Southwest Santa Rosa Redevelopment Area: the Huichica-

Wright-Zamora Soil Association developed on the unconsolidated deposits of flood plains, terraces and alluvial fans. This soil association covers most of the Santa Rosa Plain and is present throughout the Redevelopment Subareas. The soil types in this association are somewhat poorly drained to well drained, nearly level, loams to silty clay loams. The principal use of these soils is for pasture and hay.

The Huichica-Wright-Zamora Soil Association is subdivided into soil types based on a variety of distinguishing characteristics, such as texture, slope, and agricultural capability. The soil types in the Southwest Plan Area are shown in Figure 3.2.1-2, and their characteristics, pertinent to development capability, are listed in Table 3.2.1-2. The soils tend to be clays and clay loams, relatively impermeable, moderately to highly expansive, prone to settlement, and moderately to highly corrosive to untreated steel and concrete. In their undisturbed state, erosion hazard is low because of their low slopes and fine texture.

Expansive soils occur throughout the Southwest Plan Area and Redevelopment Subareas. Specific treatments to eliminate expansion of soils include, but are not limited to, grouting, recompaction and replacement with non-expansive material. Each site or alignment would be evaluated to determine the particular treatment that is most appropriate. Because expansive soils are common throughout the City, contractors and soil testing firms are familiar with the procedures to eliminate the problems involved.

Grading is expected to be minimal, because of the low topographic relief across the Redevelopment Subareas specifically and the Plan Area in General. Standard erosion control and trench wall support procedures would be applied. Some caving is expected in the coarser materials (sand and gravel) and erosion could become a problem if grading extended into the wet season. Most soils in the two Redevelopment Subareas have low erosion potential in their natural



SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN
FIGURE 3.2.1-2: SOILS

condition because of low slopes and a mixture of fine and coarse grain sizes. However, disrupted soils become more erosion-prone unless specific measures are taken to control erosion.

Geologic Units ²⁰

There are three types of unconsolidated sedimentary deposits in the Redevelopment Area: alluvial fan deposits, fluvial deposits, and older alluvial deposits. The distribution of these geologic units is shown in Figure 3.2.1-3. The younger alluvial fan deposits generally are fine- to medium-grained, but contain minor amounts of gravel. The fluvial deposits all are fine-grained (clay, silt, and fine sand). The older alluvium is coarse material (coarse sand and gravel). Unconsolidated sedimentary deposits represent material eroded from the hills to the east and deposited in ancient river channels or as alluvial fans. They are excavated easily, but will not stand long in steep unsupported slopes. The clayey material is prone to expansion and does not drain easily. The coarser-grained sediments (sand and gravel) drain readily and there is a possibility (although a very low one) that some pockets of liquefiable sand exist within these deposits.

Faults

The known active fault traces closest to the Plan Area are those of the Rodgers Creek fault, about three miles to the east. This is the only fault in the vicinity of Santa Rosa that is zoned by the State under the Alquist-Priolo Earthquake Fault Zoning Act of 1972. No other Earthquake Fault Zones or known active faults traces cross or trend toward the Plan Area.²¹ The traces of the Rodgers Creek fault in the Earthquake Fault Zone are not historically active, but show evidence of activity during the last 10,000 years.²² The Rodgers Creek fault is capable of generating a characteristic earthquake of M_w 7.1 and peak horizontal ground accelerations in excess of 0.6g. Groundshaking intensity associated with this event is expected to be at least VIII on the Modified Mercalli Intensity (MMI) Scale. MMI VIII causes slight damage in specially designed structures, but considerable damage to ordinarily substantial buildings. An earthquake of this magnitude would be sufficient to create peak accelerations severe enough to cause major damage to structures, foundations and underground utility lines. In looser unconsolidated deposits (sand) close to the epicenter, peak accelerations could be higher.²³ Seismic ground response in the vicinity of the fault trace could cause severe damage to older commercial or residential buildings

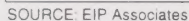


FIGURE 3.2.1-3: GEOLOGY

TABLE 3.2.1-2
SOIL CHARACTERISTICS
SOUTHWEST SANTA ROSA REDEVELOPMENT AREA

Soil Type ¹	Percolation Rate ²	Expansion Potential ³	Erosion Hazard ³	Liquefaction Potential ³	Soil Strength ⁴	Corrosion Hazard ³	Agricultural Capability Class ⁵
Alluvial land	Variable	Variable	Variable	Variable	Variable	Variable	II
Clear Lake clay	S	H	VL	L	P	H	II, III
Pajaro clay loam	MS	L	VL	VL	F	M	III
Wright loam	M-VS	L-H	L-M	VL	F-P	H	III, IV
Yolo clayey to gravelly loam	M	L-M	L	VL	F-P	L	I, II
Zamora silty clay loam	MS	M-H	L	VL	F-P	M-H	I

Notes:

See Figure 3.2.1-2 for distribution of soil units.

² VR = Very Rapid
R = Rapid
MR = Moderately Rapid
M = Moderate
MS = Moderately Slow
S = Slow
VS = Very Slow

³ VH = Very High
H = High
M = Moderate
L = Low
VL = Very Low
⁴ G = Good
F = Fair
P = Poor

⁵ I = Few Limitations
II = Moderate Limitations
III = Severe Limitations
IV = Very Severe Limitations
V = Impractical to Cultivate
VI = Severe Limitations; Generally Unsuitable for Cultivation
VII = Very Severe Limitations; Unsuitable for Cultivation
VIII = Precluded from Use for Commercial Planting

Source: USDA — NRCS, 1972.

that were not properly constructed and secured to their foundations. For buildings constructed to current California Building Code seismic-resistance standards, the damage potential is lower, but still not insubstantial, unless the buildings are constructed using site-specific design to address the proximity of the fault.

Redevelopment Subarea A may be crossed by a splinter trace of the Rodgers Creek fault. This feature is mapped diagonally through Subarea A approximately from the intersection of Highway 12 and Stony Point Road to the vicinity of the intersection of Highway 101 and Bellevue Avenue, based on work completed in 1974 for the California Division of Mines and Geology (CDMG) study *Geology for Planning in Sonoma County*.²⁴ That report shows a "possibly active fault" extending from the Rodgers Creek fault, northwest through Bellevue, and connecting with a previously mapped fault trace east of Trenton. The fault east of Trenton was thought to a post-Pliocene trace (less than 1.6 million years old).²⁵ The current CDMG map of the Santa Rosa Quadrangle does not show the same connection between the Rodgers Creek fault and the fault east of Trenton, and indicates the existence of a fault trace across the Plan Area is highly speculative.²⁶ The indication is that there is no strong evidence for movement of this fault during the last 700,000 years. The CDMG has revised the Earthquake Fault Zoning maps in the vicinity of Santa Rosa as recently as 1983, and has not placed either of the speculatively located faults in an Earthquake Fault Zone, based on the lack of evidence of rupture of geologically young deposits. This does not mean the fault does not exist, but that sufficient information has not been found to confirm or deny its existence at this location.

Geo-Seismic Hazards and Constraints

The Plan Area contains moderate-risk and, potentially, high-risk geo-seismic hazard areas. The possible presence of an active fault (surface rupture hazard) in Subarea A is a high-risk issue. The effects of regional seismicity (groundshaking and associated ground failure) are moderate- to high-risk issues in both Redevelopment Subareas A and B. The presence of potentially unstable foundation support material in the form of expansive soils, weak soils, and a shallow groundwater table (potentially saturated soils) are moderate-risk issues in both Subareas. Construction-related disruption and erosion of soils also are moderate-risk issues in both Subareas.

Fault rupture is a potentially significant impact because the trace of a splinter fault in the Rodgers Creek fault zone may pass through Subarea A. The portion of the trace that has been identified clearly by the CDMG is southeast of Subarea A, and was active some time between 10,000 to 700,000 years ago. The trace trends toward Subarea A, but has not been identified in the sediments less than 10,000 years old within the Subarea. The CDMG does not consider this fault active and no Alquist-Priolo Earthquake Fault Zone restrictions have been placed around it. The fault remains a concern because it appeared in the City's Master Environmental Assessment for the Southwest Area, which was based on earlier geologic data. Although the known segment of this fault now is considered inactive, its possible presence should be taken into consideration during redevelopment of the infrastructure in Subarea A.

Groundshaking hazards in the Plan Area are classified by the CDMG as "Moderate" to "High" because of the thickness of unconsolidated alluvium (up to 100 feet) and the generally shallow groundwater table (less than 20 feet), both of which could contribute to secondary ground failures (such as liquefaction) caused by seismic vibration. Peak horizontal ground accelerations in the Redevelopment Subareas are expected to be near 0.6 g (60% of the force of gravity), which means the standards for California Building Code Seismic Zone 4 would be the minimum requirements for site design and would need to be checked on a site-specific basis to ensure appropriate seismic-resistant construction.

Liquefaction potential generally is low because of the mixture of coarse and fine sediments underlying the Subareas. However, liquefaction needs to be addressed at each construction site or alignment because conditions such as depth to water table, uniformity of grain size and mix of grain size can vary dramatically within alluvial deposits. In general the areas underlain by poorly sorted older alluvium are less liquefaction-prone than those underlain by the younger fine sand deposits.

IMPACTS AND MITIGATION MEASURES

Methodology

The examination of soils, geology and seismicity issues in this SEIR is based on information obtained from:

- Site observations;
- Review of existing published literature, including documents published by City, County, State and Federal agencies, texts dealing with geotechnical conditions in the San Francisco Bay Area, and the EIR for the Southwest Santa Rosa Area Plan;
- Review of reports, bore-hole logs and cross-sections provided by the sponsors of the various development projects within or near the Redevelopment Subareas; and
- Review of concept plans for grading and construction at the various sites of projects in the Southwest Plan Area.

Standards of Significance

Section 15382 of the California Environmental Quality Act Guidelines defines a significant effect on the environment as "... a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project ..." Further, Section 15126 (a) of the Guidelines stipulates that the Environmental Impact Report analyze "... significant environmental effects the project might cause by bringing development and people into the area affected." The example used in the Guidelines is that of a subdivision astride an active fault having the effect of attracting people to an area where they would be exposed to seismic hazards. The Guidelines lead to two criteria:

- The basic criterion applied to the analysis of the impacts of excavation, construction and grading, is whether or not implementation of the Southwest Area Redevelopment Plan, as proposed, would create a fundamental change in the soil, geologic, or seismic conditions, that would last beyond the initial development period.
- The basic criterion applied to the analysis of the geo-seismic hazards that could endanger the users of the Redevelopment Area, or adjacent areas, during the lifetime of the project is whether or not implementation of the Redevelopment Plan, as proposed, would increase exposure of people in the vicinity to unmitigated seismic hazards, soil or slope instability hazards, or other hazardous geotechnical conditions.

Impacts in either of these categories would be considered *unavoidable significant* effects of the project, if they could not be (a) reduced to an acceptable level of risk, (b) eliminated, or (c) avoided by using existing techniques, generally recognized by geotechnical consultants in the Bay Area to be applicable and feasible.

Development Assistance Program

The Development Assistance Program provides redevelopment financing for land acquisition, removal of deteriorated structures, site preparation, relocation assistance, hazardous materials remediation, and the removal of concrete runways at the Air Center. Redevelopment financing for these activities would not impact geological resources or expose people and property to the effects of geo-seismic hazards directly in Redevelopment Subareas A or B, but could generate secondary impacts through the stimulation of development in the Subareas and the Southwest Plan Area in general.

Impact 3.2.1-1

Development sites in Redevelopment Subarea A may be subject to the damaging effects of surface rupture along a possible splinter fault of the Rodgers Creek fault zone. (PS)

Surface rupturing along the trace of any fault affects all types of material; however, it does not always show clearly in unconsolidated soils or alluvium, such as occur in Subarea A. Damage caused by surface rupturing would be limited to the actual location of the fault-line break, unlike damage from groundshaking which can occur at great distances from the fault. Even a moderate earthquake can be accompanied by enough surface rupturing to damage structure foundations or buried utility lines that have not been adequately protected where they cross fault traces.

Under the Alquist-Priolo Earthquake Fault Zoning Act, the State is required to delineate "Earthquake Fault Zones" along known active faults to regulate development near active faults in order to mitigate the hazard of surface fault-rupture.²⁷ No Earthquake Fault Zones has been delineated along this possible splinter fault segment of the Rodgers Creek fault zone, because its location and existence are questionable. However, the fact that a possible fault trace, of uncertain alignment across Subarea A has been shown on several different maps over the past 40 years indicates that concern remains regarding the issue.

Mitigation Measure 3.2.1-1

Require that the recommendations of site-specific fault trace location and activity level investigations, conducted by California Certified Engineering Geologists, Registered Geologists or Geotechnical Engineers, be incorporated in the project design for sites or alignments that cross, or are within 50 feet of, the trace of the possible splinter fault that passes through Redevelopment Subarea A. Implementation of this mitigation measure, as

outlined below, would reduce this impact to an insignificant level. (I)

- If an active fault trace is found, the minimum setback from the trace shall be 50 feet, unless the site-specific fault investigation can demonstrate satisfactory safety conditions closer to the trace.
- Additional seismic-resistant earthwork and construction design criteria shall be incorporated in the project as necessary, based on the site-specific recommendations of a California Certified Engineering Geologist in cooperation with California-registered geotechnical and structural engineering professionals (see Mitigation Measure 3.2.1-2 below).

Mitigates:	Impact 3.2.1-1 (I)
Implementation:	Include in construction drawings and specifications prior to approval of final project plans and issuance of building permits.
Responsibility:	Individual project sponsors.
Monitoring:	Santa Rosa Department of Community Development.

Impact 3.2.1-2

Redevelopment Subareas A and B and the Southwest Plan Area in general will be subject to potentially damaging seismically induced groundshaking. (PS)

From the review of regional and local geo-seismic conditions, it is apparent that Santa Rosa will be subjected to at least one major earthquake during the useful economic life of the Redevelopment Plan.²⁸ The design earthquake for the Southwest Plan Area is estimated to be an M_w 7.1 earthquake on the Rodgers Creek fault, creating peak horizontal ground accelerations as high as 0.6g. The resulting vibration could cause damage to structural members of residential and commercial facilities and their associated infrastructure (primary effects), and could cause ground failures in alluvium and poorly compacted fill (secondary effects).

As previously discussed, Redevelopment Subareas A and B are underlain by alluvial materials that, in their natural state, could respond poorly to loading during seismic ground motion. To reduce the risks associated with seismically induced groundshaking, it is necessary to take the location and type of subsurface materials into consideration when designing foundations and structures for a particular project site. In the City of Santa Rosa, buildings and infrastructure are required to reduce the exposure to potentially damaging seismic vibrations through seismic-resistant design, in conformance with the California Building Code Seismic Zone 4 requirements (the most stringent in the State).

Because the requirements of CBC Seismic Zone 4 allow some discretion in the application of ground motion design parameters (CBC § 1629), it is recommended that the City perform its own review of its needs for seismic protection and apply the appropriate CBC criteria. The City's review of geologic conditions at the construction sites, the criteria for determining the design earthquake for the specific project site, and the ground motion criteria for areas in which new structures would be located should be performed by a California Registered Geologist or Certified Engineering Geologist in consultation with the geotechnical and structural engineers for the specific project. The review would ensure appropriate recommendations regarding seismic restraints that would be incorporated in the design of projects within the Redevelopment Subareas A and B and the Plan Area in general to increase the chances of survival for residents and visitors to the area in the event of a major earthquake.

Mitigation Measure 3.2.1-2

Require the use of site-specific ground motion criteria, as described in CBC § 1629, and reviewed by the City's California-registered geotechnical and/or structural engineer, to be incorporated in the design of trenches, slopes, foundations and structures for projects within the Redevelopment Area. Implementation of this mitigation measure, as outlined below, would reduce this impact to an insignificant level. (I)

- A. The minimum seismic-resistant design standards for all proposed facilities shall conform to the CBC Seismic Zone 4 Standards.
- B. Additional seismic-resistant earthwork and construction design criteria shall be incorporated in the project as necessary, based on the site-specific recommendations of a California Certified Engineering Geologist in cooperation with California-registered geotechnical and structural engineering professionals.
- C. During site preparation, the registered geotechnical professional shall be on the site to supervise implementation of the recommended criteria.
- D. A California Certified Engineering Geologist consultant shall prepare an "as built" map/report, to be filed with the City, showing details of the site geology, the location and type of seismic-restraint facilities, and documenting the following requirements, as appropriate.
 - 1. Engineering analyses shall demonstrate satisfactory performance of alluvium and fill where they form part or all of the support for structures.

2. Analysis of soil expansion potential and appropriate remediation (compaction, removal, *etc.*) shall be completed prior to using expansive soils for foundation support.
3. Access roads, foundations and underground utilities in fill or alluvium shall be designed to accommodate settlement or compaction estimated by the site-specific investigations of the geotechnical consultant.

Mitigates:	Impact 3.2.1-2 (I)
Implementation:	Include in construction drawings and specifications prior to approval of final project plans and issuance of building permits.
Responsibility:	Individual project sponsors.
Monitoring:	Santa Rosa Department of Community Development.

Impact 3.2.1-3

The use of expansive or weak soils for foundation support without prior treatment could create unstable soil conditions at the construction site, thus threatening the integrity of completed construction. (PS)

The existence of expansive, compressible and corrosive soils throughout the Southwest Plan Area makes it necessary to ensure the soils used for foundation support are sound. The creation of building pads or access road/parking lot bases in unsuitable soils has the potential to create future problems of foundation settlement and utility line disruption if the soils are not specifically engineered for stability.

An acceptable degree of soil stability can be achieved by adopting soil treatment programs (grouting, compaction, drainage control, *etc.*) and foundation designs (drilled piers, driven piles, *etc.*) that address site-specific soil conditions. Site-specific analysis is the basis of sound foundation design in areas where unsuitable conditions are suspected. Such analyses contain recommendations for ground preparation, earthwork, foundations, *etc.*, specific to the site, that become an integral part the construction design.

Before approving the design of projects within Redevelopment Subareas A and B, or the Plan Area in general, the City should have a completed report of soil conditions at the project site, provided by the developer, that identifies and evaluates potentially unsuitable soil conditions. The evaluations must be conducted by registered soil professionals, and measures to reduce or

eliminate inappropriate soil conditions must be applied to the site. The site-specific measures needed to achieve satisfactory soil performance cannot be determined until the soil evaluations are complete and at least conceptual designs for the project have been prepared. At a minimum, the investigations must provide information and recommendations for the following items:

1. The characteristics of the soil materials at the site.
2. The most appropriate type of treatment to correct inadequacies in the support soils.
3. The most appropriate type of foundations for the proposed structures.
4. The design criteria for the recommended foundation type.
5. The estimated ground settlement rate beneath the foundation.
6. The necessary subgrade preparation for the foundations.
7. The lateral pressures for retaining walls.
8. The drainage conditions at the site.
9. The suitability of on-site soils for use as backfill.

The recommendations of the foundation reports prepared for the construction of buildings at the specific project site are required to be incorporated in the Plans and Specifications for the design of the project.

Mitigation Measure 3.2.1-3

Require site-specific soil suitability analysis and stabilization procedures, and design criteria for foundations, as recommended by a California-registered soil engineer during the design phase for each site where the existence of unsuitable soil conditions is known or suspected. Implementation of this mitigation measure, as outlined below would reduce Impact 3.2.1-3 to an insignificant level. (I)

- A. During the design phase for each site where the existence of unsuitable soil conditions is known or suspected, the developer's registered soil engineering consultant shall provide documentation to the City that:
 1. site-specific soil suitability analyses has been conducted in the area of the proposed foundation to establish the design criteria for appropriate foundation type and support, and

2. the recommended criteria have been incorporated in the design of foundation.
- B. During grading for these sites, the registered soils professional shall be on the site:
1. to observe areas of potential soil unsuitability,
 2. to supervise the implementation of soil remediation programs, and
 3. to verify final soil conditions prior to setting the foundations.
- C. The registered soils engineering consultant shall prepare an "as built" map/report, to be filed with the City, showing details of the site soils, the location of foundations, sub-drains, clean-outs, *etc.*, and the results of suitability analyses and compaction tests.

Mitigates:	Impact 3.2.1-3 (I)
Implementation:	Include in construction drawings and specifications prior to approval of final project plans and issuance of building permits.
Responsibility:	Individual project sponsors. Conduct field inspections and prepare as-builts.
Monitoring:	Santa Rosa Department of Community Development.

Public Projects Program

The Redevelopment Plan includes provision for a series of infrastructure improvements to accommodate growing public service needs associated with the 1994 Southwest Santa Rosa Area Plan. The Public Projects Program under Redevelopment Plan includes financing for roadway improvements, storm drain improvements, sewer system improvements, and municipal water system upgrades. Because these projects are construction projects directly assisted through the Redevelopment Plan, the construction related soils, geology and seismicity impacts discussed under the Development Assistance Program, together with mitigation measures, would apply equally to infrastructure projects constructed under the Public Projects Program.

Housing Program

The Housing Program provides assistance to build, improve and preserve low and moderate income housing. Any housing construction within Redevelopment Subareas A or B, or housing construction within the Southwest Plan Area in general as stimulated through housing construction in Subareas A or B, would be subject to the same soils, geology and seismicity impacts and

mitigation measures as discussed under the Development Assistance Program. Therefore, Impact and Mitigation Measures 3.2.1-1 through 3.2.1-3 as discussed under the Development Assistance Program would apply equally to construction assisted under the Housing Program.

Notes - Soils, Geology and Seismicity

1. Oakeshott, G.B., *California's Changing Landscapes, A Guide to the Geology of the State*, 2nd edition, McGraw-Hill Book Company, San Francisco, 1978, 378 pages.
2. a) Hinson, J.C., D.R. Huffman and G. Troughton, *Geologic Study of the Bennett Valley Area*, 1872.
b) Herzog Associates, Inc., *Report, Preliminary Geologic Evaluation, The Woods at Fitch Mountain, A.P. # 02-64-02, Healdsburg, California*, prepared for Doiley and Sass, Santa Rosa CA, by Herzog Associates, Santa Rosa CA, G.W. Russey, Geologist, and D.H. Peterson, E.G.1186, 6 November 1989, HAI Job Number 6085.1-0-2.
c) Wagner, D.L., and E.J. Bortugno, *Geology of the Santa Rosa Quadrangle*, California Geology, 1983, volume 36, number 12, pages 257 - 280.
3. Wagner, D.L., and E.J. Bortugno, *Santa Rosa Quadrangle*, California Division of Mines and Geology, Regional Geologic Map Series, No. 2A (Geology), 1982, sheets 1 & 5, scale 1:250 000.
4. Schlocker, J., *Geology of the San Francisco North Quadrangle, California*, United States Geological Survey, Professional Paper 782, Washington, D.C., 1974, 109 pages, 67 figures, 2 plates, map scale 1:24 000.
5. **Glossary**

Alquist-Priolo Earthquake Fault Zone: In 1972 the State of California began delineating special studies zones (called Earthquake Fault Zones since January 1994) around active and potentially active faults in the state. The zones are revised periodically, and extend 200 to 500 ft. on either side of identified fault traces. No structures for human occupancy may be built across an identified active fault trace. An area of 50 ft. on either side of an active fault trace is assumed to be underlain by the fault, unless proven otherwise. Proposed construction within the Earthquake Fault Zone is permitted only following the completion of a fault location report prepared by a California Registered Geologist.

Characteristic Earthquake: The moment magnitude (see below) of the seismic event considered representative of a particular fault segment, based on seismologic observations and statistical analysis of the probability that a larger earthquake would not be generated during a given time frame. In the Bay Area, the characteristic earthquake for the Peninsula segment of the San Andreas fault has a moment magnitude (M_w) of 7.1; the entire Hayward fault, a M_w of 7.3; and the northern segment of the Calaveras fault, M_w 6.9. The term "characteristic earthquake" replaces the term "maximum credible earthquake" (see below) as a more reliable descriptor of future fault activity.

Horizontal Ground Acceleration: The speed at which soil or rock materials are displaced by seismic waves. It is measured as a percentage of the acceleration of gravity ($0.5g = 50$ percent of 32 ft. per second squared, expressed as an horizontal force). *Peak* horizontal ground acceleration is the maximum acceleration expected from the characteristic earthquake predicted to affect a given area. *Repeatable* acceleration refers to the acceleration resulting from multiple seismic shocks. *Sustained* acceleration refers to the acceleration produced by continuous seismic shaking from a single, long-duration event.

Maximum Credible Earthquake (MCE): The largest Richter magnitude (M) seismic event that appears to be reasonably capable of occurring under the conditions of the presently known geological framework. This term has been replaced by "characteristic earthquake," which is considered a better indicator of probable seismic activity on a given fault segment within a specific time frame.

Modified Mercalli Intensity (MMI) Scale: A 12-point scale of earthquake intensity based on local effects experienced by people, structures, and earth materials. Each succeeding step on the scale describes a progressively greater amount of damage at a given point of observation. Effects range from those which are detectable only by seismicity recording instruments (I) to total destruction (XII). Most people will feel Intensity IV ground motion indoors and Intensity V outside. Intensity VII frightens most people, and Intensity VIII causes alarm approaching panic. The scale was developed in 1902 by Giuseppe Mercalli for European conditions, adapted in 1931 by American seismologists Harry Wood and Frank Neumann for conditions in North America, and modified in 1958 by Dr. Charles F. Richter to accommodate modern structural design features.

Moment Magnitude (M_w): A logarithmic scale used by modern seismologists to measure the amount of energy released by an earthquake. For the purposes of describing this energy release (i.e. the "size" of the earthquake on a particular fault segment for which seismic-resistant construction must be designed) the moment magnitude (M_w) of the characteristic earthquake for that segment has replaced the concept of a maximum credible earthquake of a particular Richter magnitude. This has become necessary because the Richter scale "saturates" at the higher magnitudes; that is, the Richter scale has difficulty differentiating the size of earthquakes above M 7.5. The M_w scale is proportional to the area of the fault surface that shifts (slips) during an earthquake, and, thus is directly related to the length of the rupture. It reflects the amount of "work" (in the sense of classical physics) done by the earthquake. Although the numbers of the M_w scale may appear lower than those of the traditional Richter magnitudes, they convey more precise (and more useable) information to geologic and structural engineers.

Richter Magnitude Scale: A logarithmic scale developed in 1935 to 1936 by Dr. Charles F. Richter and Dr. Beno Gutenberg to measure earthquake magnitude (M) by the amount of energy released, as opposed to earthquake intensity as determined by local effects on people, structures, and earth materials (for which, see Modified Mercalli Intensity Scale). Each whole number on the Richter scale represents a 10-fold increase in amplitude of the waves recorded on a seismogram and about a 31-fold increase in the amount of energy released by the earthquake. Because the Richter scale tends to saturate above about M 7.5, it is being replaced in modern seismologic investigations by the moment magnitude (M_w) scale (see above).

Prime Farmland: Lands with the best combination of physical and chemical features able to sustain long-term production of agricultural crops. The land must be cropped and be supported by a developed irrigation water supply that is dependable and of adequate quality during the growing season. Land must have been used for production of irrigated crops at some time during the two update cycles prior to the mapping date.

Farmland of Statewide Importance: Lands similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. These lands have the same reliable source of adequate quality irrigation water available during the growing season. Land must have been used for production of irrigated crops at some time during the two update cycles prior to the mapping date.

Farmland of Local Importance: Lands of importance to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee.

Urban and Built-up (Developed) Land: Lands occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a ten-acre parcel.

Other Land: Lands which do not meet the criteria of any other category.

6. Huffman, M.E. and C.F. Armstrong, *Geology for Planning in Sonoma County*, California Division of Mines and Geology, Special Report 120, 1980, 31 pages, 5 plates, map scale 1:62 500.

3. Environmental Setting, Impacts and Mitigation Measures
3.2.1 Soils, Geology and Seismicity

7. a) Jennings, C.W., *Fault Activity Map of California and Adjacent Areas, with locations and ages of Recent Volcanic Eruptions*, Geologic Data Map No. 6, California Division of Mines and Geology, 1994, scale 1:750 000, accompanied by 92 pages of explanatory text.
b) Association of Bay Area Governments, *The San Francisco Bay Area — On Shaky Ground*, Publication Number P95001EQK, April 1995, 56 pages, 13 maps, scale 1:1 000 000.
8. Seismology Committee, Structural Engineers Association of California, *Recommended Lateral Force Requirements and Tentative Commentary*, San Francisco, California, 5th edition, revised June 30, 1988, 163 pages, see p. 1.
9. Working Group on California Earthquake Probabilities, *Probabilities of Large Earthquakes in the San Francisco Bay Region, California*, United States Geological Survey Circular 1053, 1990, p. 29.
10. Working Group on California Earthquake Probabilities, 1990, *op. cit.*
11. a) R.D. Borchardt, *et al.*, *Maximum Earthquake Intensity Predicted on a Regional Scale*, United States Geological Survey, Miscellaneous Field Investigations Map MF-709, 1975, scale 1:125 000.
b) Steinbrugge, K.V., J.H. Bennett, H.J. Lagorio, J.F. Davis, G.A. Borchardt and T.R. Toppozada, *Earthquake Planning Scenario for a Magnitude 7.5 Earthquake on the Hayward Fault in the San Francisco Bay Area*, California Division of Mines and Geology, Special Publication 78, 1987, 243 pages, 12 scenario maps, scale 1:200 000, see maps & accompanying text on adjacent pages.
12. Jennings, C.W., *Fault Activity Map of California and Adjacent Areas, with locations and ages of Recent Volcanic Eruptions*, Geologic Data Map No. 6, California Division of Mines and Geology, 1994, scale 1:750 000, accompanied by 92 pages of explanatory text.
13. Association of Bay Area Governments, *On Shaky Ground, City Maps: City of Santa Rosa*, Publication Number P95002EQK-SON-5, April 1995, 3 maps, scale 1:73 000.
14. Jennings, 1994, *op. cit.*
15. *Alquist-Priolo Earthquake Fault Zoning Act*, California Public Resources Code, Division 2, "Geology, Mines and Mining," Chapter 7.5 "Earthquake Fault Zones," Sections 2621 through 2630; signed into law 22 December 1972, amended 1974, 1975, 1976, 1979, 1991, and 1993.
16. Hart, E.W., *Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with index to Earthquake Fault Zones Maps*, California Division of Mines and Geology, Special Publication 42, revised 1994, 34 pages.
17. International Conference of Building Officials, *Uniform Building Code*, Volumes 1, 2 & 3; Chapter 16, Structural Forces (earthquake provisions); Chapter 18, Foundations and Retaining Walls; Chapter A33, Excavation and Grading, Whittier CA, 1994.
18. United States Geological Survey, *Santa Rosa Quadrangle, California, 7.5 Minute Series (Topographic)*, 1954, photorevised 1980, scale 1:24 000, and *Sebastopol, California, 7.5 Minute Series (Topographic)*, 1954, photorevised 1968, scale 1:24 000.
19. United States Department of Agriculture, Natural Resources Conservation Service (formerly the Soil Conservation Service), *Soil Survey of Sonoma County, California*, V.C. Miller, Party Chief, Washington, D.C., 1972, 188 pages, 13 tables, 2 maps, scale 1:380 160, 123 plates, scale 1:20 000.

20. This information is summarized from previously published regional reports that include the Southeast Santa Rosa Plan Area, and supplemented by geotechnical investigations within the Plan Area. Major sources include the following documents.
- a) Fox, K.F. Jr., J.D. Sims, J.A. Bartow, and E.J. Helley, *Preliminary geologic map of eastern Sonoma County and western Napa County, California*, United States Geological Survey, Miscellaneous Field Studies Map MF-483, 1973, 4 sheets, map scale 1:62 500.
 - b) Wagner and Bortugno, 1983, *op. cit.*
 - c) Travis, R.B., *Geology of the Sebastopol Quadrangle, California*, California Division of Mines, Bulletin 162, San Francisco, California, 1952, 33 pages, 3 plates, map scale 1:62 500.
 - d) Donald Herzog & Associates, *Geotechnical Investigation, Northpoint Business Park, Santa Rosa, California*, 1985 and 1988.
21. Hart, 1991, *op. cit.*
22. Jennings, 1992, *op. cit.*
23. Greensfelder, R.W., "Seismicity, Groundshaking and Liquefaction Potential," in: M.E. Huffman and C.F. Armstrong, *Geology for Planning in Sonoma County*, California Division of Mines and Geology, Special Report 120, 1980, pages 5 to 14.
24. Huffman and Armstrong, 1980, *op. cit.*, Plate 3B, scale 1:62 500.
25. Travis, 1952, *op. cit.*, page 24 and Plate 1, map scale 1:62 500.
26. Wagner and Bortugno, 1982, *op. cit.*, Sheet 5, scale 1:250 000.
27. Hart, 1991, *op. cit.*
28. Working Group on California Earthquake Probabilities, 1990, *op. cit.* The United States Geological Survey projected a 22 percent chance of at least one earthquake greater than Richter Magnitude 7 on the Rodgers Creek fault within the following 30 years (1990 to 2020).

3.2.2 HYDROLOGY AND WATER QUALITY

INTRODUCTION

Pertinent data on hydrology and water quality previously compiled for the Southwest Santa Rosa Area Plan Final Environmental Impact Report (FEIR March 1994) are summarized and incorporated by reference into this report. Information contained in this existing literature was updated and expanded for this analysis based on field surveys conducted on November 13, 1999 and reviews of updated regulatory data as explained further below. Throughout this section, reference is made to the Southwest Plan Area as a whole, which includes Redevelopment Subareas A and B.

SETTING

Surface Water

Drainage

The Southwest Santa Rosa Plan Area encompasses two noncontiguous Redevelopment Subareas (Subareas A and B) totaling approximately 2,014 acres. These Subareas and the Southwest Plan Area's broad land surface gently slope toward the southwest at less than a one percent gradient. Elevations are near 150 feet above mean sea level (+150 feet msl) in the northeast corner of the Plan Area, and drop to about +90 feet msl in the southwest corner. Drainage occurs in a generally southwest direction. Existing development includes residential, schools, parks and commercial/industrial areas.

Approximately 30 percent of the Southwest Plan Area is covered by impervious surfaces, such as roadways, parking lots and buildings. The largest concentrations of impervious surfaces are in the commercial/industrial areas along Corporate Center Parkway and Northpoint Parkway, in the suburban developments in the northeast quarter of the Plan Area, and more than 100 acres of concrete runways and roads at the Air Center.

The Southwest Plan Area can be divided into three main drainages: Roseland, Colgan and Naval Creeks (see Figure 2-5 in Section 2, Project Description). The northwest corner of the Southwest Plan Area contains a small portion of the Santa Rosa Creek Watershed. The Southwest Plan Area is tributary to Laguna de Santa Rosa, a stream that contains the major drainages of the

southeastern portion of the watershed of the Russian River. The Laguna de Santa Rosa drains an area of 254 square miles and is actually a long chain of marshes and wetlands interconnected by a series of poorly-defined natural and modified channels with restricted flow capacity. These conditions have created a series of natural detention basins that slow the discharge of flood waters into the Russian River. The Laguna also provides overflow storage for flood waters that originate at the northern end of the Russian River watershed.

The following describes the major watersheds, channels and creeks in the Plan Area:

- ***Roseland Creek***

Roseland Creek's watershed extends from Highway 12 and Highway 101 in the northeast to Llano Road in the southwest. The creek is an intermittent stream that flows southwest across the Plan Area in a more or less natural channel for about 2 miles. Near Hearn Avenue, southeast of the Air Center, the stream enters the Roseland Creek Flood Control Channel. This channel was designed and built by the Sonoma County Water Agency in the early 1970s, based on buildout to General Plan land uses in effect at that time. As recommended in the 1994 Southwest Santa Rosa Area Plan Final EIR the Roseland Creek Channel has been expanded recently in order to increase its flood conveyance capacity. The Roseland Channel Expansion Project consists of 3,800 lineal feet of channel widening in order to convey at least the 25-year storm event within the channel boundaries. The Roseland Creek Flood Control Channel continues south, leaving the Plan Area through a box culvert under Ludwig Avenue east of South Wright Road, and eventually flows into Laguna de Santa Rosa about 2.5 miles to the southwest.

- ***Colgan Creek***

Colgan Creek is an intermittent stream that flows southwest across the southeast Plan Area in a natural state for approximately one mile. The stream crosses under Petaluma Hill Road in a culvert and continues in a constructed reinforced concrete box channel (12 feet by 7 feet) until it reaches the Colgan Creek Flood Control Channel just north of Bellevue Ave. This concrete channel continues westward for 2.5 miles and then reverts to a natural state for another 2.5 miles to the Laguna de Santa Rosa.

- ***Naval Creek***

Naval Creek is an intermittent stream that flows west across the Air Center in a modified channel. It accepts overflow from Roseland Creek, passes under the north-south runway in a triple box culvert, and continues west to flow under South Wright Road in a box culvert.

■ ***Santa Rosa Creek***

Santa Rosa Creek runs between Highway 12 and Montgomery Drive into Downtown Santa Rosa, where it enters an underground culvert system at E Street. The stream resurfaces at Santa Rosa Avenue into a fully improved and stabilized channel section that carries it underneath Highway 101 and west across the Santa Rosa Plain to the Laguna de Santa Rosa.

The Santa Rosa area receives average rainfall ranging from 28 to 32 inches per year, with almost 80 percent of this total occurring between the months of December and March.¹ Average annual runoff of this rainfall equals approximately 12 inches. Rainfall intensities range from 1.2 to 1.4 inches per hour, for a one hour duration, 100-year recurrence interval storm.

Flood Hazard

The Sonoma County Water Agency (SCWA) is responsible for ~~most~~ some of the maintenance of major streams and flood control facilities throughout the Plan Area. There are a number of existing improvements which convey stormwater runoff to the creeks and drainageways within the Plan Area; these range from natural facilities (such as creeks) to man-made pipes and other conduits within the developed areas. Various modifications and improvements in these drainages were needed because of increased runoff from development.² These storm drainage projects generally fall within two categories. The first are improvements to existing channels. The second category includes new conduits and associated drainageway improvements. Within the project area, SCWA has flood control maintenance responsibilities for Roseland Creek Channel from Burbank Avenue to Ludwig Avenue, Colgan Creek from Highway 101 to Bellevue Ave, and Moorland Channel south of West Robles Avenue to Todd Road.

A comprehensive stormwater management program, the Central Sonoma Watershed Project, was undertaken for the Santa Rosa region. This project removed the flood hazard designation applied by the Federal Emergency Management Agency (FEMA) from all parts of the watershed. The Federal Emergency Management Agency Flood Insurance Rate Maps indicate that this region of Santa Rosa is in Zone C, an area of minimal flooding (less than 1 foot)³. The program involved construction of stream channel modifications and upstream flood control detention basins within or adjacent to the Southwest Plan Area.

Localized flooding and capacity issues were originally identified within the 1994 Southwest Area Plan Final EIR by the City of Santa Rosa at two locations: the Colgan Channel between Corby Avenue and the Northwestern Pacific Railroad, and the Roseland Channel where it passes through the Santa Rosa Air Center. The Roseland Creek Channel has been significantly widened for flood control purposes and presently will contain at least the 25-year design flow. The Colgan Channel at Corby Avenue, approximately 0.2 miles to the west of Santa Rosa Avenue, is an earthen channel with lining only on curved sections. The 1994 Final EIR identified the above portion of Colgan Channel as having inadequate capacity to accommodate the 25-year design flow and channel improvements were suggested. An additional storm drain along Petaluma Hill Road south of Yolanda Avenue was also recommended in the 1994 Final EIR to serve future development in the Southeast Plan Area and to prevent downstream flooding in the Southwest Plan Area south of Hearn Avenue.

The Santa Rosa Southwest Area Plan lists sixteen proposed storm drainage infrastructure projects (see Appendix A). The following eight projects listed are those that have not been initiated or at least partly completed to date: Colgan Creek Channel, Conceptual Area Drainages: West Hearn/Yuba/Ludwig Area, Fresno Avenue Conduits, Naval Creek, Naval Creek Channel, South Wright Conduit, Springfield Drainages, and West Avenue Supplementary Conduit. The remaining eight projects are either currently under construction, mostly completed or wholly completed.⁴

The SCWA has reviewed the EIR Notice of Preparation for the Southwest Santa Rosa Redevelopment Plan and indicated concern over potential flooding impacts. The Agency SCWA issued the following statement to the Department of Community Development on November 5, 1999:

“Zoning changes for the proposed Redevelopment Plan may increase storm water runoff. The Agency is concerned with the cumulative effects of flooding as a result of incremental increases in runoff due to paving or surfacing from new development. Although, an individual project’s impact to flood control would likely be minimal, the contribution from the subject plan and other projects in the area could cause a significant cumulative impact on the ability to control flooding in the Agency’s flood-control waterways and facilities. For this reason, the Agency requests the opportunity to review environmental documents and civil design plans related to the subject plan when they become available.”

Water Quality

Surface water quality of the region is monitored by the State Water Quality Control Board (North Coast Region). The State Board implements a Water Quality Control Plan or basin plan, to control water quality in order to achieve the maximum benefit possible. Under the basin plan for the Santa Rosa region, present beneficial uses listed for the reach of the Laguna de Santa Rosa include agricultural and industrial supply, recreation, freshwater habitat and wildlife habitat.⁵ Present and potential water quality problems identified by the Regional Water Quality Control Board in the Basin Plan include: increased surface runoff, sedimentation, the disposal of municipal wastes and wastewater, and impacts associated with underground storage tanks.

Surface water quality in the Southwest Plan Area is influenced by the three separate sources of water that contribute to the flow within local drainage channels: natural streamflow, stormwater and irrigation runoff, and direct discharges. Natural streamflow is limited, and depends on the slow drainage of groundwater through surface seeps and springs located throughout the hills that surround Santa Rosa. This water generally is free of contamination, although it often contains high concentrations of dissolved minerals and other naturally occurring solids. Stormwater and irrigation runoff enter streams directly as overland flow, carrying the dissolved or suspended residue of both natural and human land uses within each watershed. This can include sand, silt, clay, organic fertilizers and pesticides, heavy metals, oil and grease, animal waste, decaying forest litter, and debris. Direct discharges into streams generally are made only by industrial plants and wastewater treatment facilities. Discharges are regulated locally by the North Coast Regional Water Quality Control Board (RWQCB), which grants permits for waste discharges and enforces the treatment provisions set forth in each permit.

The sand, silt and clay carried by stormwater runoff are the products of continuing soil erosion within the watershed. As topography flattens, soil is deposited and slowly accumulates. The accumulated material gradually lowers the channel capacity and forces flood waters increasingly farther into the surrounding floodplain. Through urbanization, the resulting increase in stormwater runoff has caused longer duration, high velocity flows in the easily eroded natural stream channels. Upland erosion also is causing sedimentation in the Laguna de Santa Rosa, slowly lowering its capacity to mitigate downstream Russian River flooding.⁶

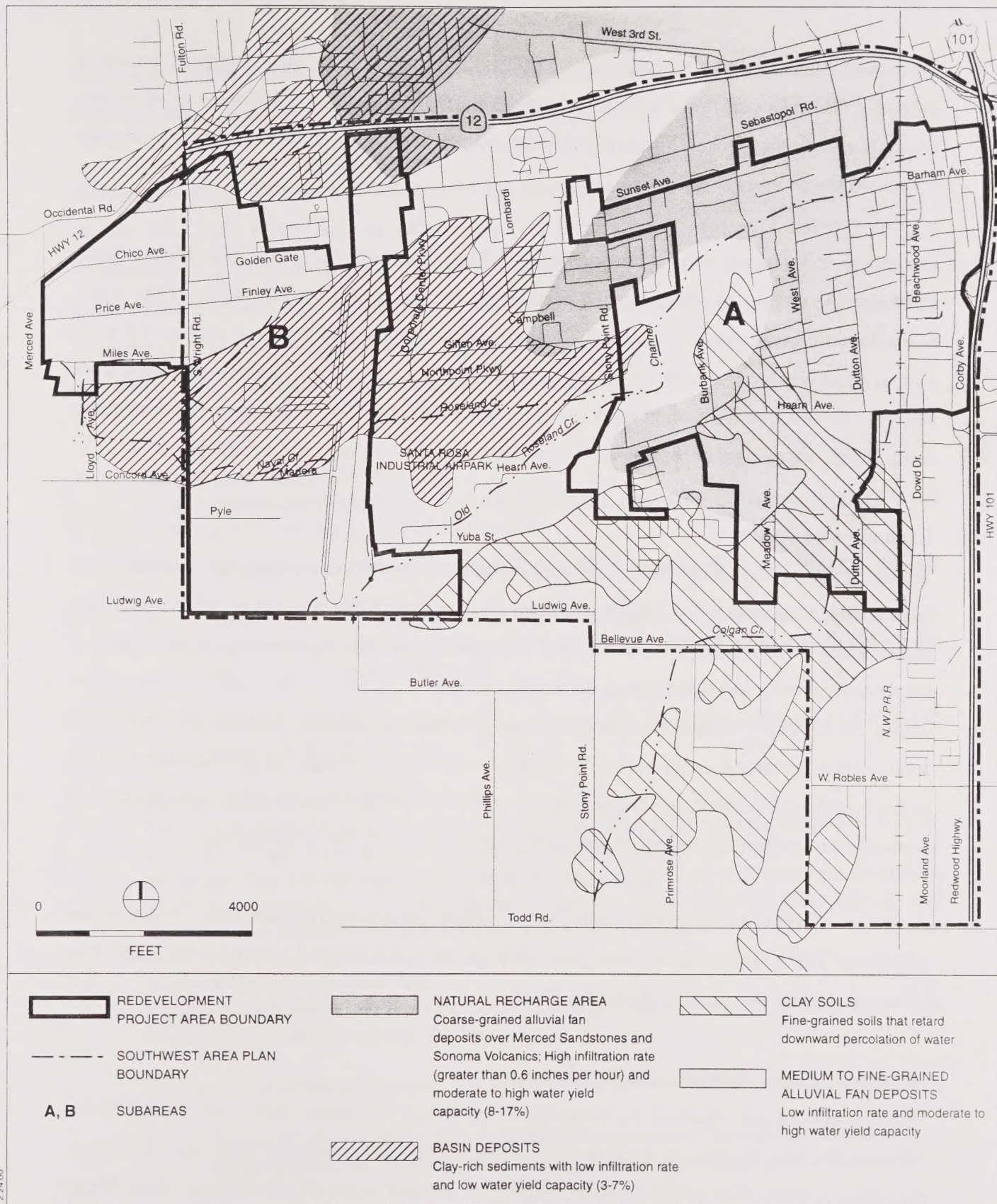
Groundwater

Occurrence

The Southwest Plan Area is located within the Santa Rosa groundwater basin. The groundwater basin is compartmentalized extensively because of the discontinuous nature of most of the water-bearing formations, and because of folding and faulting, which disrupt groundwater flow, results in a variety of groundwater level conditions and a complicated pattern of groundwater quality. Division of the groundwater basin into semi-isolated units also implies that these units tend to remain localized, barring any substantial changes in pumpage patterns.⁷

The major water-yielding units in the Southwest Santa Rosa Plan Area are the alluvial fan deposits and the Merced formation sandstones. The Merced formation averages 500 feet in thickness, and is buried beneath the Plan Area by about 400 feet of alluvial sediments. It is one of the principal water-yielding formations in Sonoma County.

A survey of wells was conducted by the California Department of Water Resources in the 1970s. This survey indicated the existence of thousands of wells in south and central Sonoma County. Pumpage for irrigation accounts for a larger quantity of groundwater than the other uses combined. Recharge of groundwater occurs through percolation of rainfall and seepage from streams, primarily where land slopes are relatively gentle, and soils and geologic materials are permeable. Recharge is limited within much of the Santa Rosa Plain and the adjoining low hills by the relatively high clay content of the basin soils and existing impermeable surfaces, especially around the Air Center. The clay soil layer forms a cap above the water table that slows the percolation of rainwater, causing prolonged ponding in low lying areas and often preventing the construction of septic tank leachfields. Within the Santa Rosa Plain, the most significant natural recharge areas are located along the channels of Santa Rosa, Mark West, Matanzas, Rincon, and Windsor Creeks, and Laguna de Santa Rosa. None of these important natural recharge zones are within the Southwest Plan Area. A natural recharge area was identified in previous studies by the Department of Water Resources (DWR) in the northeastern portion of the Southwest Plan Area.⁸ Recharge in this portion of the Southwest Plan Area (Figure 3.2.2-1) is reduced by existing development (about 42 % is covered with impervious surfaces), slow infiltration (high groundwater levels retard downward percolation) and limited soil permeability (high clay and fine silt content slows water passage).



SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN
FIGURE 3.2.2-1: GROUNDWATER RECHARGE AND YIELD AREAS

From recharge areas, groundwater tends to flow toward streams or the troughs of the major valleys. Groundwater flows across the Southwest Plan Area in a southwesterly direction. Groundwater discharge occurs primarily through seepage to streams, marshes or through pumpage of wells.

Groundwater levels and depth to groundwater differ considerably across southern Santa Rosa, reflecting the variety of water-bearing formations and the compartmentalization of the major basins. In the Southwest Plan Area, shallow groundwater generally occurs at depths of 5 to 20 feet, with higher levels during the winter and early spring. The DWR study of the Santa Rosa Plain in 1982 identified a drop in water levels between 1960 and 1980 which occurred in southern Santa Rosa. Pumping depressions have been identified in the Cotati and Sebastopol areas.

Groundwater Quality

The Santa Rosa groundwater basin's primary recharge zones are the marshes and wetlands of the Laguna de Santa Rosa. The Laguna de Santa Rosa area provides a series of natural detention basins which slow discharge of stormwater into the Russian River, allowing the settlement of suspended sediment and significant groundwater recharge. As a result, the quality of stream flow within the Laguna's tributaries directly affects groundwater quality. Groundwater quality in south-central Sonoma County generally is good to excellent, although the groundwater tends to be hard, with high calcium and magnesium concentrations. Hard water results in the build-up of deposits in water heaters and pipes and reduces the cleaning action of detergents.

A number of locations in the Southwest Plan Area have experienced groundwater contamination problems. For a discussion of hazardous materials and contamination issues see the Hazardous Materials section (Section 3.1.8) of this SEIR.

Applicable Plans, Policies, and Regulations

Water resources are regulated by a variety of statutes at the local, State, and Federal levels administered by a variety of jurisdictions. Agencies having jurisdiction with respect to water resources include: City of Santa Rosa, ~~SCWA Sonoma County Water Agency~~, State Water

Resources Control Board and Regional Water Quality Control Board, California Department of Fish and Game, and U.S. Environmental Protection Agency.

Most significant of the requirements to which the Redevelopment Plan project would be subject include the Clean Water Act, as enforced by the U.S. Army Corps of Engineers and the Environmental Protection Agency; the Porter-Cologne Water Quality Control Act and related Code sections administered by the State Water Resources Control Board; and, permitting and licensing requirements which occur during development review by the local jurisdiction. The applicable plans, policies and regulations are outlined below.

■ **City of Santa Rosa General Plan**

Applicable policies of the City of Santa Rosa General Plan with which development would be required to comply include the following:

- To preserve and restore the natural network of creeks and creek habitats [OSC-1].
- To conserve water in agricultural, industrial, commercial and residential uses. To maintain high levels of water quality for human consumption and for other life systems in the region [OSC-6].
- To control erosion and sedimentation to provide flood protection and protect water quality [OSC-7].

■ **City of Santa Rosa Ordinance 3272**

The City of Santa Rosa has in effect Ordinance Number 3272 wherein Section 19-64.010 of the City Code is amended to read that all subdivisions shall be designed to provide for proper grading and erosion control, including the prevention of sedimentation or damage of off-site property. Specific language regarding grading and erosion control and sedimentation measures are provided for within the Ordinance.

■ **Sonoma County General Plan**

Applicable policies of the Sonoma County General Plan with which development would be required to comply include the following:

Resource Conservation Element, 3.0 Water Resources

- Policy RC-3a: Grading, filling and construction should not substantially reduce or divert any stream flow that would affect groundwater recharge.

Public Safety Element, 3.0 Protection from Flood Hazards

- Policy PS-2e: Use the 100 year flood event and corresponding elevations as the County measure of acceptable level of risk and protection in the consideration of any amendments on the land use plan map.
- Policy PS-2f: On-site and off-site flood related hazards shall be reviewed for all projects located within areas subject to known flood hazards.
- Policy-2g: Regulate development, water diversion, vegetation removal, grading and fills to minimize any increase in flooding and related damage to people and property.
- Policy-2i: Require that design and construction of drainage facilities be subject to the review and approval of the Sonoma county Water Agency.

■ **Sonoma County Water Agency**

The Sonoma County Water Agency ~~must approve~~ reviews project plans for all proposed on-site drainage systems, as well as for all new or upgraded facilities that may be required off-site within the city of Santa Rosa. SCWA reviews projects for conformance with the SCWA's Flood Control Design Criteria. Also, the Sonoma County Permit and Resource Management Department reviews project plans in unincorporated areas of the County. Culverts and drainage systems must be designed to accommodate the runoff from a 25-year recurrence interval storm event. In addition, all structures must be protected from flooding expected to occur during a 100-year recurrence interval storm.

■ **State Regional Water Quality Control Board/State Water Resources Control Board**

The State Regional Water Quality Control Board, North Coast Region has jurisdiction over the Russian River and its tributaries. The Regional Board is required by law to develop, adopt and implement a Water Quality Control Plan for the entire region. The principal elements of this plan are:

- Statement of beneficial water uses which the Board will protect;
- Water Quality objectives needed to protect the designated beneficial water uses; and
- Strategies and time schedules for achieving the water quality objectives.

These water quality objectives are to be achieved primarily through the establishment and enforcement of waste discharge requirements.

The State Water Resources Control Board has developed water quality objectives for priority pollutants. The objectives are contained in a document entitled "Development of Water Quality Control Plans for: Inland Surface Waters of California and Enclosed Bays and Estuaries of California" adopted 11 April 1991. Alternatives for developing statewide water quality objectives address three major areas of protection: (1) aquatic life; (2) human health; and (3) exposure to chlorinated dibenzodioxins and dibenzofurans. Among the other provisions

pertaining to the above-stated objectives are (a) all point and non-point discharges (including urban runoff) must comply with the identified water quality objectives; and (b) effluent limits are to be imposed, either through National Pollutant Discharge Elimination System (NPDES) permits or waste discharge requirements, such that the water quality objectives shall not be exceeded in the receiving water outside a designated mixing zone.

- **California Department of Fish and Game/U.S. Army Corps of Engineers**
Any significant alterations to existing creeks/streams, including flood control projects, are subject to review by the California Department of Fish and Game. All construction activity occurring within designated stream corridors is subject to review and approval by the agency. The submission and approval of a Section 1601 Streambed Alteration Agreement from the California Department of Fish and Game is normally required prior to the initiation of construction within a creek/stream channel. Additionally, the U.S. Army Corps of Engineers would need to issue a Section 404 Permit under the Clean Water Act for any alterations to wetlands. These subjects are discussed further in Section 3.2.3, *Vegetation and Wildlife*.
- **U.S. Environmental Protection Agency**
The 1972 amendments to the Clean Water Act prohibit the discharge of pollutants to navigable waters from a point source unless the discharge is authorized by an NPDES permit. Industries that have direct stormwater discharges to navigable waters are required to obtain permits. It is within the existing authority of the Regional Water Quality Control Board to issue an NPDES permit for any stormwater outfall to the waters of the United States. According to the Basin Plan, after December 1991, the Regional Water Quality Control Board will require that an NPDES Permit be obtained for construction grading activities for all projects greater than five acres. This permit will require implementation of nonpoint source control of stormwater runoff through the application of a number of Best Management Practices (BMPs). These practices are meant to reduce the amount of constituents entering streams and other water bodies.

A BMP Program, as required by the Regional Water Quality Control Board, describes stormwater management practices to control storm-runoff water quality. Practices include reporting of spills, implementing "good housekeeping" techniques to reduce contamination of surface water, preventive maintenance, inspection and record-keeping, security measures, and employee training. A Spill Prevention Control and Countermeasure Plan is included in the program. If construction is scheduled to occur throughout the year or is unlikely to be restricted to the dry months of the year, the BMPs must be implemented to ensure that sediment is confined to the construction area and not transported off-site. Erosion control also is required by the City, County, and the RWQCB through general plan policies and regulatory permits (NPDES permit in the case of the RWQCB).

IMPACTS AND MITIGATION MEASURES

Introduction

This section addresses the general impacts on hydrological resources, including surface runoff, groundwater resources, and water quality. Construction of roadway circulation projects, water supply projects, sanitary sewer projects, storm drainage projects, and build-out of the Southwest Plan Area through private development as assisted through the proposed Redevelopment Plan would have direct and indirect impacts on water resources. Background information was collected from topographical maps of the area and reports prepared by the Department of Water Resources, the U.S. Geological Survey, the Regional Water Quality Control Board, and the City of Santa Rosa. These data, in conjunction with the results of a field survey by EIP hydrologists (11/23/99), were used to determine the existing streamflow conditions, sedimentation rates, drainage inflows, and adjacent stream reach conditions. Potential hydrology impacts were determined by assessing what changes would result in streamflow, sediment generation, drainage, groundwater conditions and potential water quality concerns during and following construction completion.

On 23 November, 1999 a scoping meeting was held by the City of Santa Rosa to allow the public to voice concerns regarding the proposed Redevelopment Plan. Among the concerns participants raised were the issue of stormwater management and the contention that the Redevelopment Plan would lead to increased stormwater runoff, potential for well contamination, and an increased flood hazard. While these potential impacts were addressed in the 1994 Southwest Area Plan EIR, they continue to be an issue and are further addressed in this document.

Standards of Significance

Hydrology and water quality impacts are considered significant if one or more of the following conditions would result from project construction:

- A significant change in rate and amount of surface runoff or change in amount of water in any water body.
- A substantial degradation of water quality.
- The contamination or substantial reduction of a public water supply.
- A substantial degradation or depletion of groundwater resources.

- A substantial interference with groundwater recharge or direction and rate of groundwater flow.
- The location of facilities within a flood-prone area or alterations to the course or flow of floodwater.
- Substantial flooding, erosion or siltation.
- The alteration of stream flow characteristics which result in erosion, sedimentation or flooding downstream.

Evaluation of the significance of Redevelopment Plan project impacts in relation to these criteria is provided in the following discussion.

Development Assistance Program

The Development Assistance Program basically provides redevelopment financing for land acquisition, deteriorated structure removal, site preparation, relocation assistance, hazardous materials remediation and the removal of concrete runways at the Air Center. Redevelopment financing for these activities, but could generate impacts to hydrology and water quality through the stimulation of development and/or the removal of obstacles to development within Redevelopment Subareas A or B, or the Southwest Plan Area as a whole.

Impact 3.2.2-1

Construction of proposed residential, commercial and mixed-use projects within the Southwest Plan area as assisted through redevelopment would result in an increase in impervious areas and higher levels of surface runoff than currently leaves the area, potentially increasing erosion and flooding in downstream drainageways. (PS)

As indicated previously, approximately 30 percent of the Southwest Plan Area is developed and covered by impervious area; that is roadway, driveways, and building footprints. Build-out of the Southwest Plan Area would replace much of the existing undeveloped areas (vacant land) with building area, but also would change some existing land uses containing high proportions of impervious surfaces (i.e., General Industry) to land uses with lower proportions of impervious surfaces (i.e., Low Density Residential). The 1994 Area Plan EIR estimates the expected change in impervious area by making a broad assumption for site coverage for each particular land use

and comparing the existing land uses with the proposed land uses. The following percentage of impervious areas have been assumed and are still relevant to the current Redevelopment Plan:

Residential - Low and Medium Low Density (1,935 ac.)	30 %
Residential - Medium and High Density (435.4 ac.)	70 %
Retail/Business Service/Office (285.1 ac.)	90 %
Public/Institutional (145.2 ac.)	70 %
General Industry (285.1 ac.)	90 %
Business Park (362.9 ac.)	80 %
Open Space (140 ac.)	15 %
Parks/Recreational (124.6 ac.)	25 %

Using these assumptions, approximately 49 percent of the Southwest Plan Area would be covered by impervious area. This is a conservative estimate given that landscaping and irrigated areas would be incorporated into individual lot design.

The increase in impermeable surfaces (approximately 63 percent more than existing impervious surfaces) would increase the total amount of surface runoff which currently leaves the area. Approximate calculations of the magnitude of the increase were estimated using the Rational formula as outlined in the Sonoma County Water Agency Flood Control Manual. For a storm event of 25-year recurrence interval, the peak of surface runoff of ~~1972~~ 1604 cfs would be associated with this increase in impervious area.⁹ This increase would be divided among the drainages which cross the Plan Area, but would affect the Roseland, Naval and Colgan Creek watersheds most severely.

The increase in runoff would have significant impacts at the locations previously identified, where drainage capacity problems now exist. Both the Southeast and Southwest Area Infrastructure Plans recognize the need for improvements to the existing creek channels and associated drainageways (see Figure 2-5 and Appendix A).

It is assumed that each individual project proposed within the Southwest Plan Area would be subject to City requirements for the provision of drainage, that storm drainage must be provided such that the depth of storm flow is contained within a street curb height of six inches. Individual projects necessarily would be required to connect to the existing storm drainage network.

Portions of Colgan Creek, Roseland Creek, and Naval Creek presently exist as natural channels. Urbanization of the watershed of these drainages and development immediately adjacent to the stream banks would result in disruption and need for channel improvements to convey increased storm flows adequately as addressed above. It was the intent of the City of Santa Rosa General Plan that the City work "to preserve and restore the natural network of creeks and creek habitats" within the City (Open Space and Conservation Policies 1a & 1b). Drainage improvements which may be necessary to provide adequate drainage must consider these policies. .

Provided the capacity problems are addressed and sufficient drainage infrastructure is in place following development with consideration of the need for natural channels, no significant drainage impacts would occur within the Redevelopment Plan Area. However, the increased volume of runoff could contribute to additional depth or area of flooding along the Laguna de Santa Rosa, making it necessary to modify portions of the drainage channels downstream from the Plan Area.

Mitigation Measure 3.2.2-1

- (a) Overall mitigation strategy includes project specific design review focused on the development and inclusion of explicit elements to reduce the proportion of impervious surfaces within each individual project area and to allow improved management of stormwater flows throughout the Southwest Plan Area.
 - i. Incorporate measures into drainage projects (storm drains, conduits, and channel improvements) that maximize infiltration/permeability and trap pollutants and sediment from stormwater runoff.
 - ii. To the extent possible, locate newly planned impervious surfaces to avoid identified natural recharge areas.
 - iii. Wherever feasible, use the Bay Area Stormwater Management Agencies Design Guidance Manual to modify roadway, landscaping and channel improvement projects to incorporate recommended design elements such as: sediment traps, gravel strips and/or trenches, concave planting areas, permeable substrate, and infiltration basins at the end of downspouts.
- (b) The portions of the Roseland Creek channel and the Colgan Creek channel west of U.S. 101 which have been enlarged and modified ~~to convey the design storm runoff from the Southeast and Southwest Plan Areas~~ should be further evaluated to determine if additional improvements within the channel corridors are needed

to convey storm runoff and improve water quality. Portions of the Naval Creek Channel in the vicinity of the Air Center, should be widened and reconfigured to accommodate the design storm runoff and prevent flooding in cooperation with ~~under the direction~~ of the Sonoma County Water Agency.

- (c) Improvements which may be necessary to the natural drainages which cross or are downstream from the Southwest Plan Area should be undertaken with ~~the approval of review~~ by the Sonoma County Water Agency and to the design standards specified in the Sonoma County Flood Control Design Manual for natural waterways or constructed natural waterways. These improvements should take the form of a naturalized channel to the specifications of the City of Santa Rosa. Up to date Best Management Practices are included in the Start at The Source Design Guidance Manual Published by the Bay Area Stormwater Management Agencies Association (1999).
- (d) Storm-water infiltration basins should be included in project design where feasible as an integral contingency measure to reduce flooding impacts and to improve downstream water quality. The locations of improvements should coincide with the outfalls of specific drainage conduits or other locations deemed suitable by the Sonoma County Water Agency. (I)

Mitigates:	Impact 3.2.2-1 (I)
Implementation:	Prior to approval of final project design phases.
Responsibility:	City of Santa Rosa in collaboration with SCWA and individual project sponsors.
Monitoring:	City of Santa Rosa in collaboration with the Sonoma County Water Agency.

Traditional designs for managing runoff emphasize maintaining the efficiency of conduits (i.e. pipes and channels) in transporting stormwater to downstream locations where the water is later released and/or stored. Stormwater runoff is often managed using this approach, although many opportunities for increasing water quality are lost. Stormwater collected in pipes/stormdrains and conveyed long distances before treatment reduces opportunities for improved water quality. "End of pipe" strategies such as detention basins/ponds are important components of an overall stormwater management system, but may be more complex and costly than strategies that start at the source. Small collection and infiltration strategies, located at the point where runoff initially meets the ground, repeated consistently over an entire project area, will yield the greatest runoff control and water quality improvements for the least cost.¹⁰ The overall mitigation strategy should include an interagency project design review which focuses on the development and

inclusion of specific elements which reduce the proportion of impervious surfaces and allow for an improved management of stormwater flows.

Impact 3.2.2-2

Projected proposed project development as assisted through the Redevelopment Plan will reduce infiltration in a natural groundwater recharge zone by about 25 percent. (PS)

The northeastern third of the Southwest Plan Area, inclusive of portions of Redevelopment Subarea A, is recognized as a natural groundwater recharge zone by the Department of Water Resources (DWR) because it is underlain by alluvial fan deposits. However, existing development has rendered over 42 percent of this area impervious, and the variable (but generally high) clay content of the soil reduces the permeability of the remaining unpaved space. The high water table retards downward migration of groundwater to the alluvial and sandstone aquifers. Consequently, the area is not considered a primary recharge zone by DWR. Nonetheless, recharge does occur within this zone, and its reduction or loss has the potential to affect groundwater reserves adversely in the long-term. Proposed build-out under the Southwest Area Plan would raise the percentage of impervious surfaces in this portion to about 54%, thus reducing, by about 25%, the unpaved space in the potential recharge zone. Although this is not a clearly identifiable significant impact of the Redevelopment Plan, it represents a cumulative reduction of potential recharge area and, therefore some alteration of the available groundwater supply.

Mitigation Measure 3.2.2-2

Implement Mitigation Measure 3.2.2-1. (I)

In addition, during design review, the City shall encourage the use of detention basins/ponds where feasible to partially offset the loss of groundwater recharge area within the Plan Area. Such artificial recharge programs shall be coordinated through the Sonoma County Water Agency to ensure a rational, consistent and systematic approach. Maintenance of the detention basins/ponds and potential for long-term accumulation of pollutants in these facilities shall be addressed in the design of mitigation programs that include basins/ponds.

Mitigates:	Impact 3.2.2-2 (I)
Implementation:	Prior to approval of final project design phases.
Responsibility:	City of Santa Rosa in collaboration with SCWA and individual project sponsors.
Monitoring:	City of Santa Rosa in collaboration with the Sonoma County Water

~~Agency, City of Santa Rosa Department of
Community Development.~~

Under the Development Assistance Program, the potential for erosion impacts resulting from construction would also exist, and mitigation would be required to prevent erosion, sedimentation deposition and increased flooding potential resulting from erosion. Refer to the discussion under the Public Projects Program below which would apply equally to the Development Assistance Program.

Public Projects Program

The Redevelopment Plan includes provision for a series of infrastructure improvements to accommodate growing public service needs associated with the 1994 Southwest Santa Rosa Area Plan. The Redevelopment Plan includes financing for roadway improvements, storm drain improvements, sewer system improvements, and municipal water system upgrades. The construction related hydrology and water quality impacts discussed for the Development Assistance Program, together with mitigation measures, would apply equally to the Public Projects Program. In addition, the primary impacts associated with the Public Projects Program would be for potential declines in water quality during and immediately following construction, and increases in surface runoff associated with increases in impermeable surfaces caused by private development projects as well.

Impact 3.2.2-3

Development construction activities for proposed infrastructure, inclusive of privately sponsored projects in the Southwest Plan Area, could result in short- or long-term increases in erosion. (PS)

The Russian River and its associated tributaries have been identified as impaired water bodies by the U.S. Environmental Protection Agency. The designation and inclusion within the 1998 California 303(d) list of impaired water bodies indicates that the primary pollutant/stressor of concern is sedimentation/siltation. The following sources of sediment have been identified as potential contributors within the scope of the Redevelopment Plan: construction/land development, highway/road/bridge construction, urban runoff, hydromodification, channelization, removal of riparian vegetation, and streambank destabilization.

During the construction period, soils at each construction site would be exposed to the erosive forces of wind and storm runoff to a potentially significant degree. When de-vegetated and excavated, they would be subject to gulying under the influence of moderate to heavy rains, if preventive action were not taken. Grading activities at a construction site could adversely affect downstream water quality through erosion, the transport of sediments and dissolved constituents entering the natural receiving waters and increasing turbidity and contaminant load.

Deposition of eroded soil in Colgan and Roseland Creeks or other tributary streams would decrease their capacity as drainage facilities. Given the very low slopes in the areas where grading would occur, it would be possible to control erosion and sedimentation impacts within the Plan Area and prevent downstream damage.

Mitigation Measure 3.2.2-3

Implement Mitigation Measures 3.2.2-1 and 3.2.2-2. In addition:

- A. To the extent practicable, project construction shall be scheduled for the dry season (April through September).
- B. Any project involving grading of an area greater than five acres shall be subject to an NPDES permit from the RWQCB. This permit requires that the applicant develop a Storm Water Pollution Prevention Plan. The permit requirements of the RWQCB shall be satisfied prior to granting of a building permit by the City of Santa Rosa.
- C. A soil erosion and sedimentation control plan shall be submitted to the City of Santa Rosa for individual projects prior to grading. The Erosion and Sediment Transport Control Plan, shall be designed by an erosion control professional, or landscape architect or civil engineer specializing in erosion control. ~~that would meet the following objectives for the grading, excavation, and construction periods of projects in the Redevelopment Area.~~ The implementation of this mitigation measure, as outlined below, would reduce impact 3.2.2-3 to an insignificant level.
 - (I) This plan would include, but is not limited to, the following erosion control methods:
 - (1) The Erosion and Sediment Transport Control Plan shall be submitted, reviewed, implemented and inspected as part of the approval process for the grading plans for each project.
 - (2) The Plan shall be designed by the developers' erosion control consultant, using concepts similar to those formulated by the Association of Bay Area

Governments, as appropriate, based on the specific erosion and sediment transport control needs of each area in which grading, excavation, and construction is to occur. Those concepts include some which apply generally to the entire Redevelopment Area (see bullet items on list below), and some that would be appropriate only for specific sites. The possible methods are not necessarily limited to the following items.

- Confine grading and activities related to grading (demolition, excavation, construction, preparation and use of equipment and material storage areas (staging areas), preparation of access roads,) to the dry season, whenever possible.
- Locate staging areas outside major streams and drainage ways.
- Keep the lengths and gradients of constructed slopes (cut or fill) as low as possible.
- Discharge grading and construction runoff into small drainages at frequent intervals to avoid buildup of large potentially erosive flows.
- Prevent runoff from flowing over unprotected slopes.
- Keep disturbed areas (areas of grading and related activities) to the minimum necessary for demolition or construction of the project.
- Keep runoff away from disturbed areas during grading and related activities.
- Stabilize disturbed areas as quickly as possible, either by vegetative or mechanical methods.
- Direct runoff over vegetated areas prior to discharge into public storm drainage systems, whenever possible.
- Trap sediment before it leaves the site with such techniques as check dams, sediment ponds, or siltation fences.
 - Interceptor ditches, drainage swales, or detention basins shall be used to prevent storm runoff from transporting sediment into drainageways and to prevent sediment-laden runoff from leaving the disturbed area.
 - Silt fences shall be installed to prevent sedimentation in adjacent areas and down gradients into drainages. Fences

shall be designed through the use of the Universal Soil Loss Equation to calculate their proper storage capacity, and shall be implemented by the contractor prior to mass grading and other soil disturbing construction activities on-site.

- Make the contractor responsible for the removal and disposal of all project-related sedimentation in off-site retention ponds.
 - Use landscaping and grading methods that lower the potential for down-stream sedimentation. Modified drainage patterns, longer flow paths, encouraging infiltration into the ground, and slower storm-water conveyance velocities are examples of effective methods.
 - Control landscaping activities carefully with regard to the application of fertilizers, herbicides, pesticides or other hazardous substances. Provide proper instruction to all landscaping personnel on the construction team.
- (3) During the installation of the erosion and sediment transport control structures, the erosion control professional shall be on the site to supervise the implementation of the designs, and the maintenance of the facilities throughout the demolition, grading and construction period.

Mitigates:	Impact 3.2.2-3 (I)
Implementation:	Prior to approval of final project design phase and issuance of building and grading permits.
Responsibility:	City of Santa Rosa/individual project sponsors.
Monitoring:	City of Santa Rosa in collaboration with the Sonoma County Water Agency, City of Santa Rosa Department of Community Development.

Impact 3.2.2-4

Increased runoff from additional impermeable surfaces could lower the quality of stormwater runoff. (PS)

Major contributors of contaminants to runoff in developed areas are the streets and gutters and other impervious areas directly connected to streets or storm drains. Between rainstorms materials accumulate on these surfaces in a variety of ways: for example, debris dropped or scattered by individuals; sidewalk sweepings; debris and other particulate matter washed into streets from yards and other unpaved areas; wastes and dirt from construction, renovation, and demolition; fecal droppings from dogs, birds, and other animals; remnants of household refuse dropped during collection or scattered by animals or wind; dirt, oil, tire and exhaust residue contributed by

automobiles; and fallout of air-borne particles. Solids tend to build up most rapidly during the first 48 to 72 hours after a major rainfall.¹¹ During subsequent rainfall, water may take several paths when it reaches the ground surface. As water fills surface depressions, it seeps into the ground where the ground is permeable, a process known as infiltration. As the rate of rain reaching the ground exceeds the rate of infiltration, a film of water builds up on the ground surface. Once this film is of sufficient depth, the water begins to flow down slope. This initial discharge of a storm is referred to as the “initial flow”. The initial flow of each storm often contains the highest concentrations of pollutants, but this is not always the case because the phenomenon is dependent on the duration of the preceding dry weather period, rainfall patterns, rainfall intensity, the chemistry of individual pollutants, and site-specific conditions. This impact could occur whether or not the Redevelopment Plan is implemented.

Without mitigation, the accumulation of urban pollutants would be a significant cumulative impact because uncontrolled overland flow from paved surfaces and landscaped areas would carry many of the above-listed contaminants, thereby contributing to the deterioration of the quality of storm-water runoff. The eventual result would be the deterioration of water quality in wetlands within the Redevelopment Plan Area. Reaches of drainage-ways downstream from the Plan Area, specifically those creeks such as Roseland, Naval and Colgan Creeks, that would carry stormwater runoff to Laguna de Santa Rosa and, eventually, to the lower reach of the Russian River, would be subject to water quality deterioration.

Mitigation Measure 3.2.2-4

Implement Mitigation Measures 3.2.2-1 through 3.2.2-3. (I) In addition, install easily cleanable sediment catch-basins, debris screens, and grease separators or similar water quality protection devices in the channels and drainage facilities serving the Redevelopment Plan area. (i.e., vegetated swales, buffer strips, detention pond areas). Ensure maintenance of the facilities through in-lieu fees paid to the City, and/or the establishment of homeowner associations for privately sponsored projects. (I)

Mitigates:	Impact 3.2.2-4 (I)
Implementation:	Prior to approval of final project design phases.
Responsibility:	City of Santa Rosa in collaboration with SCWA and individual project sponsors.
Monitoring:	City of Santa Rosa in collaboration with the Sonoma County Water Agency, City of Santa Rosa Department of Community Development.

Housing Program

The Housing Program provides assistance to build, improve and preserve low and moderate income housing. Redevelopment financing for these activities could generate impacts to hydrologic resources and water quality through the stimulation of development within ~~Redevelopment Subareas~~ A or B, or the Southwest Plan Area as a whole. Therefore, the discussion of hydrology and water quality impacts and mitigation measures as addressed under the Development Assistance Program and Public Projects Program would apply equally to the Housing Program.

Notes - Hydrology and Water Quality

1. S.E. Rantz, U.S. Department of the Interior, U.S. Geological Survey, Miscellaneous Field Study #613, *Isohyetal Maps of the San Francisco Bay Region, California, Mean Annual Precipitation and Mean Annual Runoff*, 1974.
2. EIP Associates. *Southwest Santa Rosa Area Plan EIR*. September, 1993. SCH No. 92083076, Ch. 3.2.2.
3. Federal Emergency Management Agency, National Flood Insurance Program, *Flood Insurance Rate Map, Sonoma County, California*, Community-Panel Number 060375 0695 A, Effective Date, 20 January 1992.
4. Sonoma County Water Agency (SCWA), Personal communication with Phil ~~Wadworth~~, Associate ~~Wadsworth~~, Assistant Civil Engineer, Drainage Section, SCWA, 7 December 1999.
5. Regional Water Quality Control Board. *Water Quality Control Plan for the North Coast Region*. September, 1991, Ch. 2-4.
6. W.R. ~~Spillman~~ Stillman, Sonoma County Water Agency, Letter to Melvin K. Davis, Sebastopol City Manager, Re: Laguna Advisory Committee Report to City of Sebastopol, January 1988; March 18, 1988.
7. California Department of Water Resources (DWR), *Evaluation of Groundwater Resources, Sonoma County, Volume 2, Santa Rosa Plain, Bulletin 118-4*, 1982, pg. 93, fig. #15.
8. DWR, 1982, op. cit.
9. The Rational Formula, $Q=CIAK$
where: $C=0.9$ for the increased impervious area
 $I = 0.96$ for a 25 year storm of 1 hour duration
 $A = 1856.1$ acres which represents about 49% impervious area of 3800 acres
 $K = 1.23$, SCWA factor included because mean seasonal precipitation in the plan area is 0.96 inches/hour.
10. Bay Area Stormwater Management Agencies Association, *Start at the Source, Design Guidance Manual for Stormwater Quality Protection*, Tom Richman & Associates, 1999, Ch. 2.
11. L. A. Roesner, "Quality of Urban Runoff" in *Urban Stormwater Hydrology*, Water Resources Monograph 7, D. F. Kibler, editor, American Geophysical Union, Washington, D. C., 1982, pp. 166-175.

3.2.3 BIOLOGICAL RESOURCES

INTRODUCTION

Data on biological resources previously compiled for the Southwest Santa Rosa Area Plan Final Environmental Impact Report (FEIR March 1994), the Conceptual Wetlands Habitat Management Plan for the Southwest Santa Rosa Area Plan (September 1993), and the Hearn Avenue Reconstruction and Improvement Project Draft SEIR (May 1995) are summarized and incorporated by reference into this report. Information contained in this existing literature was updated and expanded for this analysis based on field surveys conducted on November 13, 1999 and reviews of new data as explained below. Throughout this section, reference is made to the Southwest Plan Area as a whole, which includes Redevelopment Subareas A and B.

SETTING

This setting includes updated information regarding agency regulations and policies. Information on the current status of sensitive species of plants and animals has been provided to reflect information contained in the California Department of Fish and Game's RareFind Program dated January 5, 2000; the California Department of Fish and Game's list of Special Animals, January 2000; the January 2000 California Department of Fish and Game List of State and Federally Listed Endangered, Threatened, and Rare Plants of California and State and Federally Listed Endangered and Threatened Animals of California; and the Federal Register CFR Part 17 (December 15, 1999). This recent information is contained in Appendix B - Rare, Endangered or Threatened Plant and Animal Species Known to Occur in the Southwest Santa Rosa Plan Area (Changes in Status) and Appendix C - Common, Potential and Observed Plant and Wildlife Species in the Southwest Santa Rosa Plan Area - Sonoma County, California (Changes in Nomenclature).

Regulatory Setting

The following laws, regulations, and policies are summarized to provide a regulatory setting applicable to the discussion of biological resources:

- **Section 404 of the Clean Water Act**
Section 404 of the Clean Water Act requires that a permit be obtained from the U.S. Army Corps of Engineers prior to the discharge of dredged or fill materials into any "waters of

the United States or wetlands." Waters of the United States are broadly defined in the Corps' regulations (33 CFR 328) to include navigable waterways, their tributaries, lakes, ponds, and wetlands. Wetlands are defined as: "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that normally do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." (*Federal Register* 1982). Wetlands that are not specifically exempt from section 404 regulations (such as drainage channels excavated on dry land) are considered to be "jurisdictional wetlands." The Corps of Engineers is required to consult with the U.S. Fish and Wildlife Service, Environmental Protection Agency, State Regional Water Quality Control Board and California Department of Fish and Game (among other agencies) in carrying out its discretionary authority under Section 404.

The Corps of Engineers grants two types of permits, individual and general. Individual permits are required for certain activities that may have a potential for more than a minimal impact and necessitate a detailed application. The most common type of general permit is a nationwide permit. Nationwide permits authorize activities on a nationwide basis unless specifically limited, and are designed to regulate with little, if any delay or paperwork certain activities having minimal impacts. Nationwide permits typically take two to three months to obtain whereas individual permits can take a year or more. To qualify for a nationwide permit, strict conditions must be met. If conditions are met, permittees may proceed with certain activities without notifying the Corps of Engineers. However, some nationwide permits require a 30-day pre-construction notification period before activities can begin. Activities for which nationwide permits are granted include minor road crossings, utility corridors, and stormwater outfalls. Nationwide Permit 26 authorizes that fill of certain isolated "waters" or wetlands that affect less than one acre may be permitted with a pre-construction notification. If less than one-third acre is affected, no notification is required in certain cases.

The September 15, 1999 expiration date for Nationwide Permit (NWP) 26 has been extended. The new and modified NWPs are scheduled to be issued on or before March 2, 2000 and become effective April 14, 2000. It is expected that new versions will have more stringent requirements. The Corps will process all preconstruction notifications (PCNs) for NWP 26 activities submitted to Corps district offices on or before the publication date of the final new modified NWPs in the *Federal Register* (currently scheduled for March 2, 2000). Verification for these PCNs will remain in effect until February 11, 2002.

As of December 15, 1999, the Corps suspended General Condition 13(a)(3), which provided for authorization if the Corps does not respond within 45 days of receipt of the PCN. Therefore, a prospective permittee cannot assume, after 45 days have passed, that the proposed work is authorized by NWP 26. Consequently, an NWP 26 verification must be received prior to commencing work on all NWP 26 PCNs submitted after December 15, 2000. PCNs for NWPs that are new or modified that are submitted after publication of the final new and modified NWPs will be processed under the procedures for the new

or modified NWP. When finalized, revisions to existing Nationwide Permits will be published in the *Federal Register*.

For projects not considered “water dependent” (such as marinas or harbors) that occur in “special aquatic sites” (which include wetlands), the Environmental Protection Agency 404(b)(1) guidelines and Corps regulations require that an alternatives analysis be conducted as part of the individual 404 permit application. Before an individual permit may be granted, the conclusion of the analysis must be that there are no “practicable alternatives” that are less damaging to aquatic habitats than the proposed project. The first step in the 404(b)(1) process is to analyze alternatives that meet project objectives and would avoid filling wetlands. If project sponsors are able to demonstrate the proposed filling of wetlands is necessary to meet project objectives and there are no practicable alternatives to this filling, then the project mitigation plan would be reviewed by the U.S. Fish and Wildlife Service in relation to their mitigation policies. The USFWS policy identifies four different resource categories with criteria and mitigation goals for each. The Regional Fish and Wildlife Service office will review the resources on the site and assign a category to each. Excluding Category 1, which has a goal of “no loss of existing habitat value” or avoidance, the remaining categories range in mitigation goals of “no net loss of in-kind values” (Category 2) to “minimize loss of habitat values” (Category 4).

A Section 404 Water Quality Certification or waiver from the California Regional Water Quality Control Board is required before a 404 permit becomes valid. The Regional Board will also review the project for consistency with Waste Discharge Requirements under the State land disposal regulations (Subchapter 15). In reviewing the project, the Regional Board will consider impacts to waters of the State in addition to filling of wetlands in accordance with the State wetland policy.

■ **Migratory Bird Treaty Act of 1918**

The Migratory Bird Treaty Act makes it unlawful to “take” (kill, harm, harass, etc.) any migratory bird listed in 50 CFR 10, including their nests, eggs, or products. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, and many others.

■ **Federal Endangered Species Act of 1973**

Section 3 of the Federal Endangered Species Act (FESA) defines an endangered species as any species or subspecies “in danger of extinction throughout all or a significant portion of its range.” A threatened species is defined as any species or subspecies of fish or wildlife or plants “likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” Designated endangered and threatened animal species, as listed through publication of a final rule in the *Federal Register*, are fully protected from a “take” without a permit administered by the U. S. Fish and Wildlife Service under Section 10 of the FESA. A take is defined as the killing, capturing, or harassing of a species. Proposed endangered or threatened species are those for which a proposed regulation, but not final rule, has been published in the *Federal Register*. Federally-listed plants occurring on private land with no other Federal jurisdiction are not subject to the Section 10 take provisions.

Section 4(d) (PROTECTIVE REGULATIONS) of the Act states that the Secretary (of the Interior) may by regulation prohibit with respect to endangered plant species Federal agencies from authorizing any act prohibited under section 9(a)(2)(PROHIBITED ACTS). Section 9(a)(2)(B) finds that it is unlawful for any person subject to the jurisdiction of the United States to “remove and reduce to possession any such species from areas under Federal jurisdiction.” Section 7 of the FESA requires that federal agencies ensure that their actions are not likely to jeopardize the continued existence of a listed species or destroy or adversely modify its critical habitat. This obligation requires federal agencies to consult with the USFWS on any actions (issuing permits (including Section 404 permits) and licenses, federal funding) that may affect listed species. Consultation with the USFWS can be either formal or informal depending on the likelihood of the action to adversely affect listed species or critical habitat. Once a formal consultation is initiated, the USFWS will issue a Biological Opinion (either a “no jeopardy “ or a “jeopardy” opinion) indicating whether the proposed agency action will jeopardize the continued existence of a listed species or result in the destruction or modification of its critical habitat. A permit cannot be issued for a project with a “jeopardy” opinion unless it is redesigned to lessen impacts.

In the absence of any Federal involvement, as in a privately-funded project on private land with no Federal permit, only Section 10(a) of the FESA can empower the USFWS to authorize incidental take of a listed species provided a habitat conservation plan (HCP) is developed. To qualify for a formal Section 10(a) permit, strict conditions must be met including a lengthy procedure involving discussions with USFWS and local agencies and preparation of a HCP, appropriate NEPA documentation, and a detailed Section 10(a) permit application.

■ **California Endangered Species Act (CESA)**

The California Endangered Species Act declares that deserving plant or animal species will be given protection by the State because they are of ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the State. CESA established that it is State policy to conserve, protect, restore, and enhance endangered species and their habitats.

Under State law, plant and animal species may be formally designated rare, threatened, or endangered by official listing by the California Fish and Game Commission. Listed species are generally given greater attention during the land use planning process by local governments, public agencies, and landowners than are species that have not been listed.

In regard to private property, endangered plants may be protected by both the Native Plant Protection Act (NPPA) of 1977 and the California Environmental Quality Act (CEQA), threatened plants are protected by CESA and CEQA, and rare plants are protected by only the NPPA and CEQA. However, CESA authorizes that “Private entities may take plant species listed as endangered or threatened under the federal ESA and CESA, pursuant to a federal incidental take permit issued pursuant to section 10 of the federal ESA, if the California Department of Fish and Game (CDFG) certifies that the incidental take statement or incidental take permit is consistent with CESA. (Fish & Game Code § 2080.1(a).

■ **State of California Environmental Quality Act - Treatment of Listed Plant and Animal Species**

Both the Federal and State Endangered Species Acts protect only those species formally listed as threatened or endangered (or rare in the case of the State list). Section 15380 of the California Environmental Quality Act (CEQA) Guidelines independently defines "endangered" species of plants or animals as those whose survival and reproduction in the wild are in immediate jeopardy and "rare" species as those who are in such low numbers that they could become endangered if their environment worsens. Therefore, a project will normally have a significant affect on the environment if it will substantially affect a rare or endangered species of animal or plant or the habitat of the species. The significance of impacts to a species under CEQA, must be based on analyzing actual rarity and threat of extinction despite legal status or lack thereof.

■ **State of California - Sections 1601 - 1603 of the Fish and Game Code**

The California Department of Fish and Game (CDFG) has direct jurisdiction under Fish and Game Code sections 1601 - 1603 in regard to any proposed activities that would divert or obstruct the natural flow or change the bed, channel, or bank of any lake or stream. These regulations require that private landowners or project developers obtain a "Streambed Alteration Agreement" from the CDFG prior to any alteration of a lake bed, stream channel, or their banks.

The requirement for a CDFG streambed alteration agreement has changed because of a recent court order which requires the CDFG to conduct an environmental review pursuant to the California Environmental Quality Act (CEQA)(Pub. Resources Code, §21000 et seq.) prior to entering into a 1603 Lake or Streambed Alteration Agreement (form FG 2023). Completion of a Project Questionnaire form (FG 2024) is also required. Therefore, because of the additional process required under CEQA, which includes minimum document circulation periods, the CDFG is no longer restricted to processing applications and issuing agreements within 30 days.

■ **State of California - Sections 3503, 3503.5, 3800 of the Fish and Game Code**

These sections of the Fish and Game Code prohibit the "take, possession, or destruction of birds, their nests or eggs." Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered a "take." Such a take would also violate federal law protecting migratory birds (Migratory Bird Treaty Act).

Biological Resources

Plant Communities and Wildlife Habitats

The following is a brief, general discussion of the plant communities and wildlife habitats which occur within the Southwest Plan Area and which may be affected by development.

- ***Tree-Dominated Habitats:*** Trees form the dominant structural feature of forest and woodland habitats where the tree canopy exceeds 10 percent of the cover. Tree-dominated

habitats may also have a shrub or herb understory. In California, vegetation dominated by oaks is often called woodland, regardless of the density of the trees, while vegetation dominated by conifers or other hardwoods is called forest. This convention is used here.

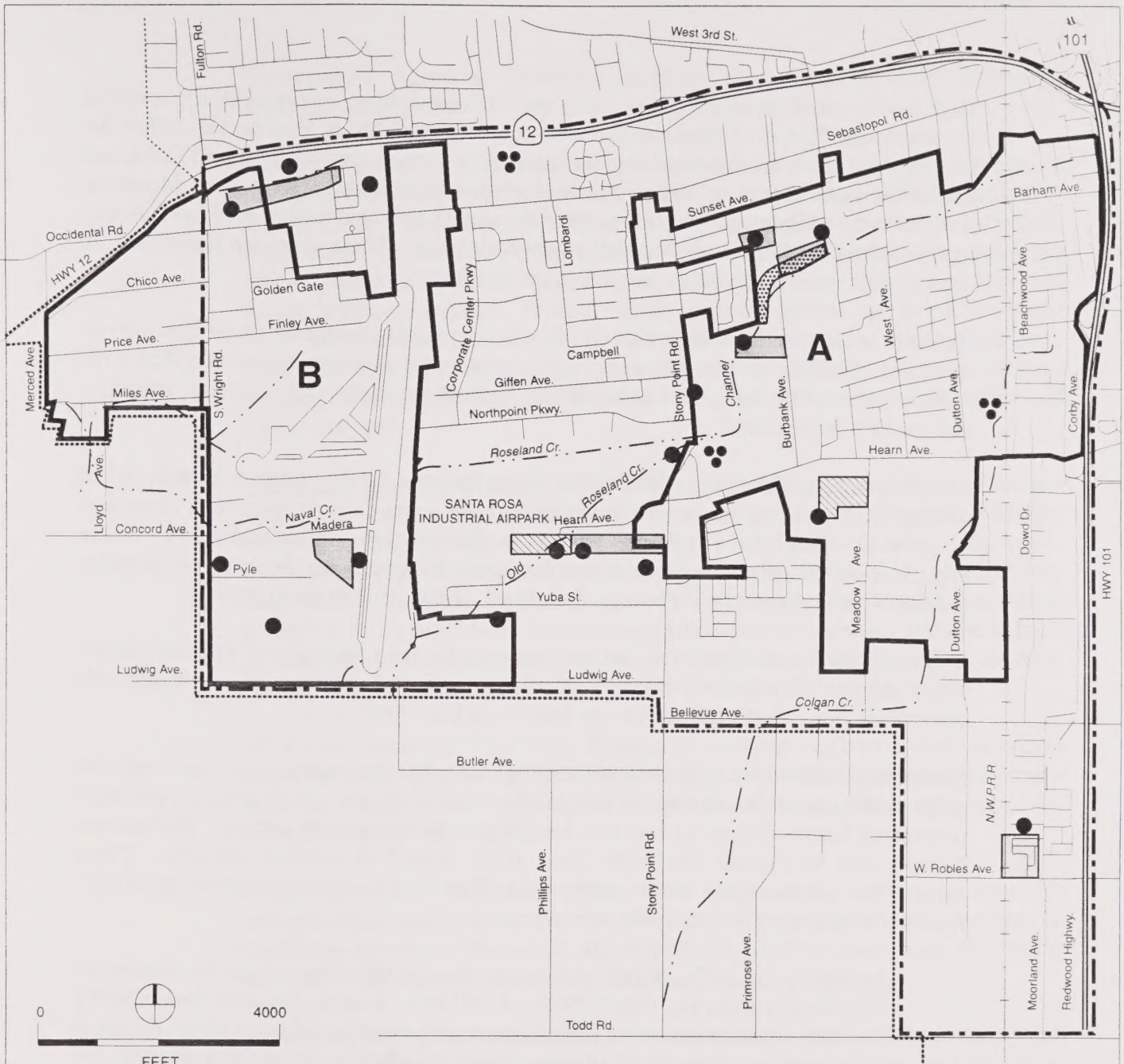
Tree-dominated habitats are uncommon within the Southwest Plan Area. A mixed grove of mature pine, eucalyptus, and walnut is located west of the Northwestern Pacific Railroad tracks, north of Hearn Avenue in Redevelopment Subarea A (Figure 3.2.3-1). There is a diverse assortment of mature landscape trees north of Sebastopol Road and west of Stony Point Road. A number of large, mature valley oaks trees and species of introduced trees are located South of Naval Creek in Redevelopment Subarea B.

- *Valley-Foothill Riparian:* Streambank woodlands can be difficult to categorize because the species mix can vary greatly depending on a number of environmental factors. Common riparian species include alder, cottonwood, and willow. Riparian forests and woodlands occur along rivers and streams, usually in areas of coarser, well-aerated soils in the valleys and lower foothills throughout California. These communities typically develop on the alluvial fans and terraces associated with gentle topography and low velocity stream flow at elevations below 3,000 feet. Woodlands of this general type are common along creeks and streams in Sonoma County.

Because riparian forests and woodlands are usually associated with a permanent or intermittent water supply, they provide food, water, and shelter for many wildlife species. As many as 50 species of amphibians and reptiles, 147 bird species, and 55 species of mammals are known to use riparian communities either as permanent residents or seasonal visitors. California quail, Nuttall's and downy woodpecker, black phoebe, Pacific-slope flycatcher, Bewick's wren, spotted towhee, broad-footed mole, raccoon, deer mouse, and southern alligator lizard are a few of the species associated with this habitat type.

A rich riparian habitat, dominated by arroyo willow, valley oak, California buckeye, and Oregon ash, with an understory of blackberry and poison oak occurs along a reach of Roseland Creek east of Burbank Avenue in Redevelopment Area B (Figure 3.2.3-1).

- *Valley Oak Woodland/Savanna:* The dominant species in this community is the deciduous valley oak which is scattered in grassland and riparian areas throughout the Southwest Plan Area. Valley oaks grow on flat, deep alluvial soils. Mature valley oaks occur in sufficient numbers and proximity to one another to be defined as "oak woodland" habitat in only a few areas. Six large valley oak trees are located south of Roseland Creek at Stony Point Road. Mature valley oaks and developing oak woodland occur east of Stony Point Road north of Roseland Creek in Redevelopment Subarea A and east of Old Roseland Creek Channel west of Stony Point Road (Figure 3.2.3-1).



- | | | |
|-------------------------------------|----------------------------------|---------------------------|
| REDEVELOPMENT PROJECT AREA BOUNDARY | GROUP OF TREES | MATURE VALLEY OAKS |
| SOUTHWEST AREA PLAN BOUNDARY | AREAS OF VALLEY OAK REGENERATION | RIPARIAN WOODLAND HABITAT |
| URBAN BOUNDARY | NATIVE COASTAL PRAIRIE | CREEKS |
| A, B SUBAREAS | | |

SOURCE: EIP Associates

SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN
FIGURE 3.2.3-1: PLANT COMMUNITIES AND WILDLIFE HABITATS

High quality stands of regenerating valley oak woodland occur in several locations within the Southwest Plan Area where orchards have been abandoned or land has lain fallow for several years. A notable area of oak regeneration is located north of Roseland Creek and east of Burbank Avenue. Valley oak regeneration is also occurring east of Moorland Avenue South of Bellevue Avenue, north of Roseland Creek and west of Burbank Avenue, and south of Naval Creek in Redevelopment Subarea B. These areas are significant, as natural valley oak regeneration is minimal in California.

As many as 30 species of birds that live in oak woodlands use acorns for at least part of their diet. Wildlife species identified in this habitat type within the Southwest Plan Area include northern flicker, acorn woodpecker, western scrub jay, oak titmouse, gray fox, and western fence lizard.

- ***Shrub-dominated Habitats:*** Shrub-dominated habitats exhibit a shrub canopy of 10 percent or more of the total area and the tree canopy never exceeds more than 10 percent of the site. This habitat type may have an herbaceous layer as an understory. These habitats are often called scrubs if they are dominated by species that are totally or partially deciduous, and chaparrals if they are dominated mostly by evergreen species.

Within the Southwest Plan Area, shrubs are present in the understory of riparian habitat. There are no significant examples of shrub-dominated habitats of an identifiable description (i.e., chaparral) within the Southwest Plan Area.

- ***Herbaceous Habitats:*** In herb-dominated habitat types, herbaceous cover exceeds two percent and trees and shrubs do not exceed 10 percent of the site. Such areas are generally considered barren if covered less than two percent by herbaceous species. Herbaceous habitats can be further subdivided into either upland or wetland habitats. Three herbaceous habitat types occur within the Plan Area: annual/perennial grassland, freshwater emergent wetland, and vernal pools.

- Annual/Perennial Grassland: Annual grassland is found throughout the valleys and foothills of California, usually below 4,000 feet. Annual grassland dominated by non-native species including ripgut brome, soft chess, and foxtail barley occurs in various places within the Southwest Plan Area where it forms the understory for the oak woodland/savanna habitats. Annual grassland occurs as a mosaic within rural and urban areas of the Southwest Plan Area.

Native perennial grasslands probably covered a great deal of the Santa Rosa Plain and Southwest Plan Area at one time, but they have been largely eliminated by urban and agricultural development. Most grassland areas are dominated by annual grasses and forbs as the result of past and present grazing practices, although native grasses and forbs are common in some places. Remnants of native perennial grassland occur southwest of the intersection of Dutton Avenue and Hearn Avenue (Redevelopment Subarea A), west of Old Roseland Creek Channel, and at other scattered locations within the Southwest Plan Area (Figure 3.2.3-1). This habitat type is characterized by at least 10 percent cover by species of native

bunchgrasses including California oatgrass, pine bluegrass (*Poa scabrella*), wildryes, and fescues.

Although grassland habitat offers an abundance of food and prey species, it provides little wildlife shelter. Shelter, however, may be provided by nearby tree- and shrub-dominated habitats. Several reptile species are common in grassland, and a number of mammals that live in burrows or dens can be found there as well. These species in turn serve as prey species for the numerous birds of prey that forage in open grasslands. Wildlife observed in this habitat type in the Southwest Plan Area include the red-tailed and red-shouldered hawk, white-tailed kite, American kestrel, mourning dove, American crow, western kingbird, western bluebird, western meadowlark, Botta's pocket gopher, black-tailed jackrabbit and California vole.

- Freshwater Emergent Wetland: This habitat is found in every county in California where the soil is saturated or at least periodically flooded. Wetland soils are usually composed of clay or silt, but organic soils also support wetland vegetation. The boundary between fresh emergent wetland and aquatic habitats is typically the deep-water edge of the emergent vegetation. Generally, this boundary occurs at a depth of about 6-1/2 feet. Vegetation in fresh emergent wetland must be adapted to saturated soils and low oxygen levels. Perennial species including cat-tails, rushes, and sedges are commonly found in wetlands of this type.

Within the Southwest Plan Area, freshwater emergent wetland vegetation occurs along the banks of the Colgan Creek Drainage Canal and its tributaries, in various drainage ditches along roadsides and in agricultural fields, and in and around the margins of small farm ponds.

A number of wildlife species require water for breeding, and several sensitive animal species use wetlands for most of their life cycle. Historically, wetlands in California have been drained for agriculture and other purposes, and, as a result, they are much less extensive today than they were in the past.

Freshwater emergent wetland areas provide a valuable source of food, water, and shelter for wildlife, and are among the most productive habitats in California. Mallards, great blue and green-backed herons, red-winged blackbirds, barn and violet-green swallows, song sparrows, common and western aquatic garter snakes and Pacific chorus frogs were all observed in this habitat type within the Southwest Plan Area.

- Vernal Pools: Within the Southwest Plan Area, vernal pools and vernal swales are located within grasslands or interspersed among scattered valley oaks. Over 650 acres of seasonal wetlands (pools, swales, and associated grasslands) are estimated to occur within the Southwest Plan Area (Figure 3.2.3-2). Some of these vernal pools support populations of the State-and Federal-Endangered Sebastopol



- | | | | | | |
|------|--|--|--|-----|---|
| | REDEVELOPMENT
PROJECT AREA BOUNDARY | | PROBABLE VERNAL POOL/
WETLAND AREAS | ● | SEBASTOPOL MEADOWFOAM |
| | SOUTHWEST AREA PLAN
BOUNDARY | | KNOWN VERNAL POOL/
WETLAND AREAS | ★ | DOUGLAS' POGOGYNE |
| | URBAN BOUNDARY | | EXTENDED VERNAL POOL/
WETLAND HABITAT BASED ON
FIELD SURVEYS | ▲ | LOBB'S AQUATIC BUTTERCUP |
| A, B | SUBAREAS | | | ■ | BAKERS' BLENNOSPERMA
"SONOMA SUNSHINE" |
| | | | | --- | CREEKS |

SOURCE: EIP Associates

SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN

FIGURE 3.2.3-2: VERNAL POOLS, VERNAL POOL PLANTS, AND WETLAND LOCATIONS

meadowfoam and Baker's blennosperma. Douglas' pogogyne and California tiger salamander also occur in these pools. There is potential habitat for the vernal pool fairy shrimp and California linderiella as well. Golden eagles hunt the dried pools. In winter, the pools provide valuable wintering habitat for resident and migratory shorebirds and waterfowl.

- ***Aquatic Habitats:*** Aquatic habitats are water-dominated with less than two percent vegetative cover. Rivers, streams, lakes, ponds, and ocean are the main aquatic habitats of California.
 - ***Riverine/Creeks:*** Algae grows in creeks and hydrophytic (water-dependent) vascular plants may grow in creek bottoms in the dry seasons. Valley-foothill riparian and freshwater emergent wetland habitats are commonly found adjacent to creeks. In some cases, the riparian vegetation forms a solid canopy over a river or stream, and thus modifies the riverine environment. Small portions of the Colgan Creek Drainage Canal which passes through Redevelopment Subarea A include areas of this habitat type. Fish, amphibians, invertebrates and waterfowl use this habitat. Raccoons and skunks are mammals that forage in creek habitats.
 - ***Ponds:*** The largest amount of open water aquatic habitat within the Southwest Plan Area occurs in large seasonal ponds located in the east central portion of the Air Center in Redevelopment Subarea B and the large "FEMA" pool. These seasonal ponds support large numbers of waterfowl in winter.
- ***Developed Habitats:*** Developed habitats are those that are created and maintained by man, including cropland and urban, landscaped settings. Areas of ruderal (weedy) vegetation dominated primarily by introduced species adapted to disturbance are included here. These habitats are common in Redevelopment Subareas A and B.
 - ***Urban:*** Vegetation in urban areas includes trees, shrubs, and herbaceous species. Lawns represent artificial meadows and these are used by species such as blackbirds and robins that would typically use meadows in a natural environment. Many areas within the Southwest Plan Area have been mostly or completely developed as pasture for horses and sheep, or as hayfields. These habitats are common in Redevelopment Subareas A and B.

A variety of animal species are well adapted to and common in urban environments, and habitat values vary depending on the diversity of plant species used in landscaping.

Wildlife observed in urbanized areas within the Southwest Plan Area include the American robin, European starling, house sparrow, house finch, black-tailed jackrabbit, California ground squirrel, Botta's pocket gopher and western fence lizard.

Three additional anthropogenic communities are important here, mainly because of the role they play in the vegetation of portions of Sonoma County. They are Agrestal, Pastoral, and Plantation communities and consist of vegetation that is maintained by man.

- Agrestal communities: These are comprised of plowed cropland and associated weedy vegetation. Crops are grown in portions of the Southwest Plan Area, however, agrestal communities are less important in this area today than in the past.
- Pastoral communities: Now more common in Sonoma County than in the past, these developments are primarily used for dairy farming and the maintenance of sheep, horses, and other livestock. Much of the area has been seeded for pasture which often grades into the surrounding grasslands. In these pastoral settings, vegetation is often a mix of pasture or weedy species along with a few native species.
- Plantation communities: Plantation communities include vineyards, orchards, and other large-scale plantings of trees, shrubs, and vines. Plantation communities, mostly fruit orchards, were very common developments in the past on the Santa Rosa Plain. Several plum and walnut orchards occur within Redevelopment Subareas A and B of the Southwest Plan Area at scattered locations.

Sensitive Species

Sensitive Plant and Animal Species: For the purposes of this SEIR, a plant or animal is considered a sensitive species if it fits into one or more of the following categories (see also Appendix B):

- It is listed as Endangered (FE) or Threatened (FT), or is a Federal Special Concern Species (Former Category 2 Candidate) according to the provisions of Section 4 of the Federal Endangered Species Act (FESA). The U.S. Fish and Wildlife Service (USFWS) administers the Federal Act.
- It is listed as Endangered (SE), Threatened (ST), or Rare (SR) (plants only), according to the California Endangered Species Act (CESA). The California Department of Fish and Game (CDFG) administers the State Act.
- It is a candidate for Federal (FC - former Category 1 Candidate) or State listing (SC). While not protected by either FESA or CESA, some Federal and State agencies manage candidate species to prevent them from becoming listed.
- It is considered by the CDFG to be a California Species of Special Concern (CSC). The CDFG often requests that these animal species be considered in the impact section of environmental documents.

- It is a plant species that is included in the California Native Plant Society (CNPS) Inventory. Some State and Federal agencies request that CNPS List 1 and List 2 plants be considered in the impact section. For instance, the CDFG often asks that CNPS List 1B species be included in rare plant surveys. Less frequently, an agency may request the inclusion of plants on the CNPS List 3 and List 4 (see Appendix B).
- It is considered rare, threatened, or endangered under Section 15380(d) of the California Environmental Quality Act (CEQA) Guidelines. This section states, "A species not included in any listing identified in subsection (c) shall nevertheless be considered to be rare or endangered if the species can be shown to meet the criteria in subsection (b)." Thus, according to CEQA, a species may be considered endangered if its survival is in jeopardy due to loss or change of habitat (CEQA Guidelines Section 15380(b)(1)).

Many plant species that are Federal Candidate or Federal Special Concern species are also included on CNPS List 1B, and most State and Federal resource agencies have policies that extend some protection to these species. In considering impacts to biological resources, it is important to include impacts and potential impacts to species on the other CNPS lists because some of these species may be protected under CEQA, as described above.

By so defining sensitive species, confusion over the term *rare and endangered* is avoided because, for the purposes of this SEIR, the terms *rare*, *threatened*, and *endangered* apply only to species listed R, T, or E by FESA or CESA. Sensitive species can be legally protected by FESA, CESA, or CEQA, or through policies issued by State or Federal agencies.

If project activities require permits from a federal agency, and Federally-listed species are likely to be affected, a consultation between that agency and the U.S. Fish and Wildlife Service (USFWS) is required by Section 7 of FESA.

Section 2090 of the California Fish and Game Code requires that State lead agencies consult with the CDFG if the project is likely to jeopardize the continued existence of State-listed Endangered or Threatened species. Section 2095 of the Fish and Game Code encourages the CDFG and the USFWS to work together to develop a coordinated biological opinion regarding sensitive species.

Loss of a sensitive species or its habitat is known as *take*, which means to harass, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

"Taking" of a Federal- or State-listed species is always considered significant, while take of other sensitive species may be considered significant. Permits to collect, remove, or destroy listed species are known as incidental take permits and are issued under strict guidelines by the USFWS or the CDFG as authorized by either FESA or CESA. "Taking" of Federal or State candidate species or other sensitive species may also be considered significant under CEQA Section 15380(d).

A complete, detailed list of all potential sensitive plant and animal species which might be expected to occur in the Southwest Plan Area has been updated and is contained in this SEIR as Appendix B.

- **Plants:** Twenty sensitive plant species have known locations either within the boundaries of the City of Santa Rosa or in adjacent areas that may be influenced by land use changes occurring within the City. Four of these, Burke's goldfields (*Lasthenia burkei*), Sonoma sunshine or Baker's blennosperma (*Blennosperma bakeri*), Sebastopol meadowfoam (*Limnanthes vinculans*) and many-flowered navarretia (*Navarretia leucocephala* ssp. *plieantha*) are both State- and federally-listed as Endangered. Douglas' pogogyne (*Pogogyne douglasii* ssp. *parviflora*) is a Federal Candidate species for listing. These five species, along with Lobb's aquatic buttercup (*Ranunculus lobbii*), a CNPS listed species of limited distribution, have been observed within the vernal pools in the Southwest Plan Area (Figure 3.2.3-2).

The Santa Rosa area chapter of the CNPS (Milo Baker Chapter) has reported that North Coast (Hoover's) semaphore grass (*Pleuropogon hooverianus*), a Federal Species of Concern and State-listed Rare species, is known to occur in freshwater seeps and marshes in the general region of the Southwest Plan Area. In addition, a white-flowered *Delphinium variegatum* population (with no listing status), considered a "rare genetic race," is known to occur east of Santa Rosa. Specimens of this color form for the species may possibly occur among the known colonies of typical *Delphinium variegatum* forma *superbum* populations in the Southwest Plan Area. Davy's semaphore grass (*Pleuropogon californicus* var. *davyi*), a CNPS List 4 plant, is known to occur in the western Santa Rosa Plains and potentially could occur in wetlands within the Southwest Plan Area. None of these species was observed during surveys for the 1994 or this SEIR.

The Santa Rosa 2010 General Plan EIR includes six additional sensitive plant species: Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis* - FE, CNPS list 1B), tall snapdragon (*Antirrhinum virga* - CNPS list 4), Clara Hunt's milk vetch (*Astragalus clarianus* - FE, ST, CMPS list 1B), nodding madia (*Madia nutans* - CNPS list 4), Kenwood marsh checkerbloom (*Sidalcea oregana* ssp. *valida* - FE, SE, CNPS list 1B), and mountain jewelflower (*Streptanthus tortuosus* - now rejected as too common). None of these species is known to occur within or in the immediate vicinity of the Southwest

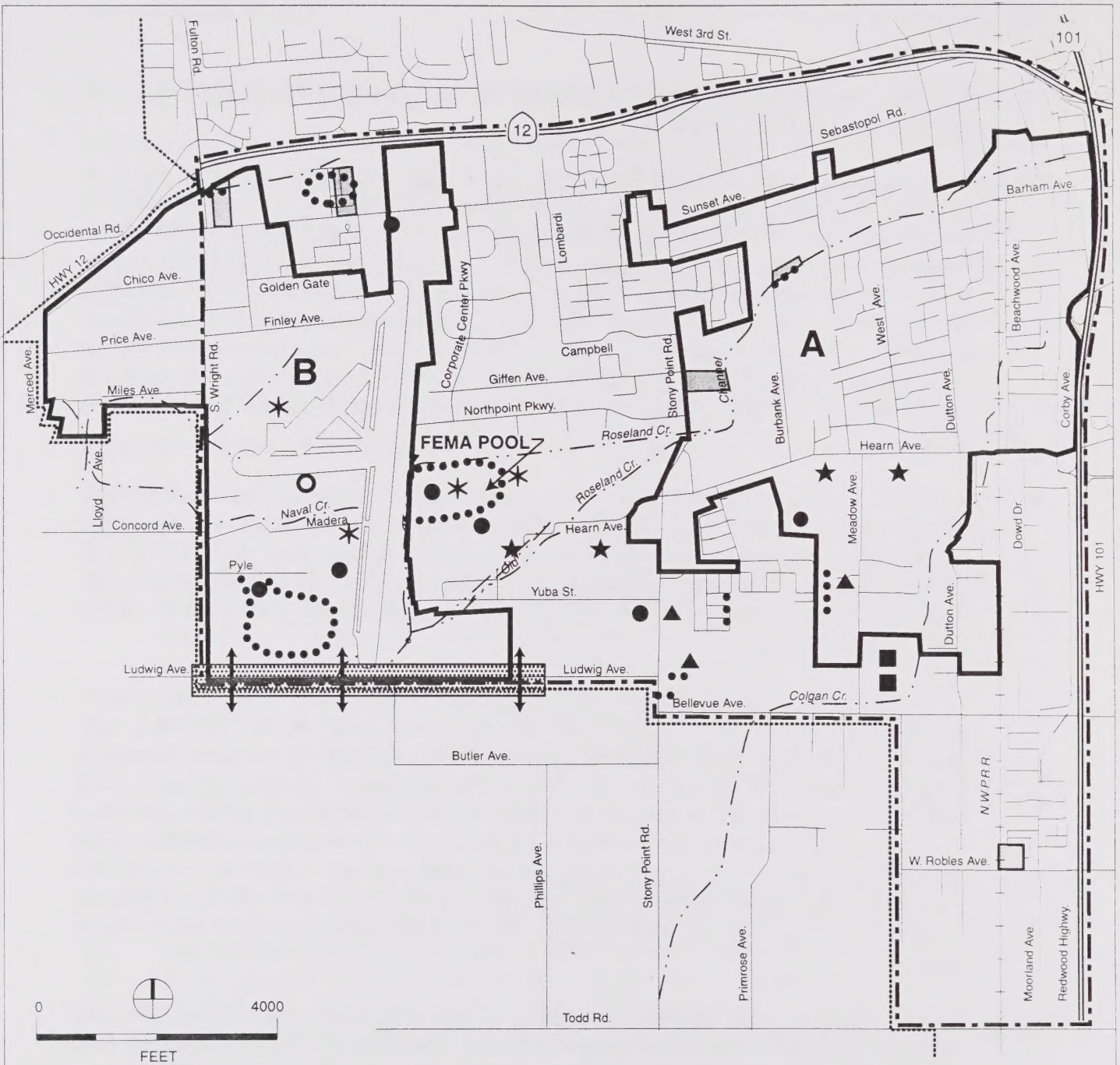
Plan Area, and none of these species was observed during surveys for the 1994 Southwest Santa Rosa Area Plan Final EIR.

In its response to the Notice of Preparation for the Southwest Area Plan EIR, the U.S. Fish and Wildlife Service included four additional plant species on a list of sensitive species that may occur in the Southwest Santa Rosa Plan Area. These are Thurber's reedgrass (*Calamagrostis crassiglumis* - Federal Species of Concern, CNPS list 2), swamp harebell (*Campanula californica* - Federal Species of Concern, CNPS list 1B), white sedge (*Carex albida* - FE, SE, CNPS list 1B), and California beaked-rush (*Rhynchosperma californica* - Federal Species of Concern, CNPS list 1B). There is potential for the occurrence of these species within the Southwest Plan Area, however, none was observed during surveys, nor are there any records of their occurrence within the Southwest Plan Area.

- **Animals:** Available habitats within the Southwest Plan Area although heavily altered and damaged by human activities, provide sufficient requirements to permit the occasional occurrence of the vernal pool fairy shrimp (FT), California tiger salamander (FC CDFG Special Concern, Protected), California red-legged frog (FT, CDFG Special concern, Protected), burrowing owl (FSC, CDFG Special Concern) and loggershead shrike (FSC, CDFG Special concern).

Although, in most cases, heavily damaged by agriculture and other developments, seasonal wetlands and vernal pools suitable for successful breeding by the California tiger salamander (*Ambystoma tigrinum californiense*), are present at many locations throughout the Southwest Plan Area (Figure 3.2.3-3). Viable populations of this increasingly rare amphibian have persisted within the Southwest Plan Area. Adults and larvae were found in vernal pool and other wetland habitats in the southwestern portion of the Southwest Plan Area during visual searches and seining for the 1994 Southwest Santa Rosa Area Plan Final EIR. The species is also reliably reported to occur at a number of sites within the Southwest Plan Area where seasonal wetlands had already dried out at the time of these surveys.

Nesting habitat of other species, included in various categories of sensitivity, observed within the Southwest Plan Area during surveys for 1994 Final EIR included the great blue heron (*Ardea herodias*), great egret (*Casmerodius albus*), white-tailed kite (*Elanus*



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|-------------------------------------|--|--|
| REDEVELOPMENT PROJECT AREA BOUNDARY | MARGINAL HABITAT FOR CALIFORNIA LINDERIELLA AND VERNAL POOL FAIRY SHRIMP | BURROWING OWL, SHARP-SHINNED HAWK, SHORT-EARED OWL |
| SOUTHWEST AREA PLAN BOUNDARY | HIGH WILDLIFE VALUES | FAIRY SHRIMP |
| URBAN BOUNDARY | POSSIBLE TIGER SALAMANDER MIGRATION ROUTES | WHITE-TAILED KITE FORAGING AREA |
| A, B SUBAREAS | CALIFORNIA TIGER SALAMANDER OCCURRENCES | LOGGERHEAD SHRIKE BREEDING AREA |
| CREEKS | | RED-SHOULDERED HAWK FORAGING AREA |

SOURCE: EIP Associates

SOUTHWEST SANTA ROSA REDEVELOPMENT PLAN
FIGURE 3.2.3-3: WILDLIFE OCCURRENCE LOCATIONS

caerulea), sharp-shinned hawk (*Accipiter striatus*), red-shouldered hawk (*Buteo lineatus*), common barn owl (*Tyto alba*), California gull (*Larus californicus*), and loggerhead shrike (*Lanius ludovicianus*) (Figure 3.2.3-3). Summaries of the circumstances of these encounters are contained in Appendix D of the Southwest Santa Rosa Area Plan Final EIR.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

CEQA defines a significant effect on the environment as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project. For the purpose of this SEIR, impacts to biological resources are considered significant if implementation of Southwest Santa Rosa Redevelopment Plan would result in one or more of the following conditions:

- Substantially reduce the habitat of a wildlife species.
- Cause a wildlife population to drop below self-sustaining levels.
- Threaten to eliminate a plant or animal community.
- Reduce the number or restrict the range of a rare or endangered plant or animal.
- Substantially affect a rare or endangered species of animal or plant or the habitat of the species.
- Interfere substantially with the movement of any resident or migratory wildlife species.
- Result in the loss of wetland or riparian habitat.

In addition, the following are considered in evaluating potential impacts to biological resources: (1) any change in the diversity of plant or animal species; (2) any reduction in the numbers of any unique, rare, or endangered species of plants or animals; (3) any introduction of new species of plants or animals into the area; (4) any barrier to the migration or movement of animals; or (5) the deterioration of existing fish or wildlife habitat.

Individuals and other organizations and agencies may identify additional areas of potentially significant impacts. These impacts can be identified during consultation with State and Federal agencies, scoping meetings, and other forms of public participation.

Impacts in any of the above categories would be considered unavoidable significant effects if they could not be (a) eliminated, (b) avoided or minimized by redesign or relocation of some components of project elements, (c) reduced to a less-than-significant level, or (d) compensated for by replacement of equal habitat extent and value.

Development Assistance Program

The Development Assistance Program basically provides redevelopment financing for land acquisition, deteriorated structure removal, site preparation, relocation assistance, hazardous materials remediation and the removal of concrete runways at the Air Center. Redevelopment financing for these activities would not directly impact biological resources within Redevelopment Subareas A or B, but could generate impacts to biological resources through the stimulation of development and/or the removal of obstacles to development within Redevelopment Subareas A or B, or the Southwest Plan Area as a whole.

The assessment of potential biological impacts in the Southwest Area Plan Final EIR was completed on a site-specific basis for all proposed privately sponsored residential, commercial and mixed-use projects and infrastructure projects. The assessment of potential biological impacts in this SEIR is general in nature, given the existing level of specificity concerning the Redevelopment Plan and infrastructure projects to be implemented under the Redevelopment Plan. Therefore, the assessment of biological impacts and mitigation measures provided below is a summary of impacts and mitigation measures as contained in the Southwest Area Plan Final EIR, which is also incorporated by reference. The analysis is updated through recent changes and/or amendments to the regulatory setting as described previously, and the current status of sensitive plant and animal species.

To the extent possible, areas of potential biological resource impacts were confirmed in the field during a field survey conducted on November 23, 1999. This survey was conducted to validate and update biological resource information in the Southwest Plan Area since the Area Plan EIR was prepared and certified in 1994. Given the 30-year time frame for completing implementation of the Redevelopment Plan, additional detailed surveys for sensitive plant and animal species were not conducted for this SEIR because such surveys are required to reflect biological conditions

immediately prior to development. This portion of the impacts and mitigation analysis focuses on the stimulation of privately sponsored residential, commercial and mixed-use projects as potentially assisted through the Redevelopment Plan Development Assistance Program.

Impact 3.2.3-1

Construction of proposed residential, commercial and mixed-use projects within the Southwest Plan Area as assisted through redevelopment would result in the loss of an undetermined number of Valley Oaks and an undetermined acreage of regenerating Valley Oaks and Valley Oak Woodland. This would be a significant impact. (S)

Two principal threats to valley oak include agricultural conversion and urban development which continue to remove valley oak throughout its range. Loss of valley oak is of particular concern because of its limited distribution and because it is not regenerating adequately to sustain current stand levels over most of its range. Loss, fragmentation, or degradation of Valley Oak Woodland habitat is significant because valley oak habitats are known to support a wide variety of birds, amphibians, mammals, and invertebrates.

Construction activities associated with grading and filling could result in removal or damage to trees or their root systems. The root zone of a valley oak typically extends one-half the radius of the canopy beyond the drip line (the area on the ground beneath the canopy of the tree, plus one-half the canopy area).

Valley oaks are not State- or Federally-listed. They are considered a sensitive species because they have been reduced in numbers or eliminated from much of their former range. The valley oak is a "Protected Tree of Special Significance" under Sonoma County's Tree Protection and Replacement Ordinance No. 4014, and is designated as a "Heritage Tree" by the City of Santa Rosa Tree Ordinance 17-24.020. Valley oak is sparsely distributed throughout the undeveloped portions of the Southwest Plan Area as scattered trees along roadways in riparian woodland, and in association with creeks and drainage channels.

Mitigation Measure 3.2.3-1a (I)

Impacts to oaks shall be avoided and groups of mature valley oaks shall be preserved wherever possible. To ensure long-term preservation of oaks within the Southwest Plan Area, areas of natural oak regeneration (north of Roseland Creek and the intersection of

West Robles Ave. and Moorland Ave.) shall be protected. Recommended avoidance, compensation, and enhancement measures would reduce this impact to a level of insignificance. (I)

Mitigates:	Impact 3.2.3-1 (I)
Implementation:	Prior to construction
Responsibility:	Project sponsor
Monitoring:	Santa Rosa Department of Community Development

The City of Santa Rosa Tree Ordinance protects valley oaks by requiring a permit for removal of trees having a diameter of six inches or greater at 4.5 feet above grade, and by specifying special precautions which must be taken when construction activity or development takes place in the vicinity of oaks. These include fencing during construction, avoidance of disturbance and trenching within driplines, maintaining grade around trees, and prohibiting the placement of paving or landscaping requiring summer irrigation in the vicinity of oaks.

The Tree Ordinance requires replacement of trees that are removed or critically damaged during construction by a greater number of the same species. To preserve genetic integrity, project sponsors should mitigate for loss of valley oaks by replanting oaks grown from acorns obtained locally. Loss of oak woodland should be compensated for by preserving in perpetuity three acres of woodland for each one acre lost to project activities (3:1, acre for acre ratio). The exact size and number of replacement trees should be determined by the California Department of Fish and Game (CDFG) and the reviewing City body, in consideration of the provisions of the Tree Ordinance.

Pre-construction consultation should be scheduled with the City and the CDFG regarding design, siting, and construction measures which will avoid impacts to valley oaks and Valley-Foothill Riparian Woodland and the development and implementation of a valley oak mitigation and monitoring plan.

A qualified biologist should monitor trees during construction and the following spring, develop a revegetation plan, and monitor the growth and survival of the newly planted trees. Revegetation plans should require monitoring newly transplanted trees for at least five years, and the replacement of all transplanted trees that die during the monitoring period.

Mitigation Measure 3.2.3-1b (I)

The City of Santa Rosa will require the application of Best Management Practices during construction within the Southwest Plan Area to reduce impacts to valley oaks. The trees that shall be avoided and protected during construction include the oaks along Stony Point and South Wright Roads, Oak Woodland north of Roseland Creek in the vicinity of Burbank Avenue, and any isolated oak tree that has a diameter six inches or greater as measured 4.5 feet above the ground. Following Best Management Practices during construction and development and implementation of an oak woodland management plan would reduce these impacts to insignificant. (I)

Mitigates:	Impact 3.2.3-1 (I)
Implementation:	Construction drawings and specifications. during construction
Responsibility:	Project sponsor
Monitoring:	Santa Rosa Department of Community Development

Best Management Practices should be included in the plans and specifications for Southwest Plan Area projects. These should be reviewed in pre-construction meetings with the City of Santa Rosa staff, the City's contractor, and qualified biologists and should, at a minimum, include provisions that:

- construction drawings shall accurately locate areas to be avoided such as tree trunks, the root-protection zones;
- prior to construction the root-protection zone (1.5 times the canopy area) of sensitive trees shall be fenced using wire mesh fencing;
- construction staging areas be designated on plans and prohibit parking, loading, and grading during all construction activities within root zones of all trees;
- a pre-construction conference be held with contractors to review Best Management Practices and require bonding and fines to ensure the replacement of any inadvertently damaged trees;
- a tree specialist be consulted during design to accurately locate root protection zones and identify other specific measures that would limit potential indirect impacts on trees that may be encroached upon; and
- a drainage plan be designed that will avoid oak trees.

Mitigation Measure 3.2.3-1c (I)

The City of Santa Rosa will require replacement of all lost valley oak trees (tree for tree) at the ratio of prescribed in the Tree Ordinance. (I)

Mitigates:	Impact 3.2.3-1 (I)
Implementation:	Construction specifications and during construction

Responsibility: Project sponsor
Monitoring: Santa Rosa Department of Community Development

The replacement of mature valley oaks with higher numbers of young valley oak trees, is intended to mitigate the loss of valley oaks from the Southwest Plan Area.

Impact 3.2.3-2

Project construction in the vicinity of Roseland Creek and the drainage swale located south of Highway 12, between North Wright and Fern Roads within the Southwest Plan Area would result in the loss of an estimated 5 to 10 acres of Valley-Foothill Riparian Woodland. Loss of Valley-Foothill Woodland habitat would be a significant impact. (S)

Because of the importance of this habitat, the USFWS has placed riparian wetlands in Resource Category 2. Full mitigation is required for loss of riparian habitat.

Since the science of wetlands restoration, particularly riparian wetlands, is relatively new, limited data are available on the success of individual restoration efforts. In the case of riparian habitat, a relatively long period of time is required to establish even the basic structural characteristics representative of this community type. The USFWS has stated that conclusions on the growth and mortality of riparian restoration sites cannot be drawn with any certainty for 15 to 20 years following restoration.

Mitigation Measure 3.2.3-2a (I)

Impacts to Valley-Foothill Riparian Woodland shall be avoided. To ensure long-term preservation of this habitat and the valuable wildlife corridors it provides within the Southwest Plan Area, the following avoidance, compensation, and enhancement measures would reduce this impact to insignificant. (I)

- Pre-construction consultations shall be scheduled by the City of Santa Rosa with the CDFG and the USFWS regarding design, siting, and construction measures which will avoid impacts to Valley-Foothill Riparian Woodland and the development and implementation of a mitigation and monitoring plan.
- A tree survey shall be conducted by a qualified biologist or arborist which will quantify the number of trees to be removed and which will identify heritage trees. Understory shall be listed in square footage. The exact size and number of replacement trees and understory shall be determined by the CDFG and the reviewing City body.

- When riparian vegetation is lost as a result of project work, the CDFG recommends a 5:1 replacement ratio for all trees lost, using appropriately sized trees. For riparian understory vegetation a 1:1 replacement rate is generally required by area.
- A comprehensive mitigation and monitoring plan shall be developed in consultation with a biologist. The revegetation plan shall specify that replacement trees and understory plants originate from local sources.
- To further protect riparian habitat, the CDFG recommends that project design observe a 100 foot setback from creek banks or the outer limit of existing riparian woodland for all construction. The final design width of the setback will need to be negotiated with the CDFG.
- Where oaks or other protected or heritage trees are present in riparian woodland, mitigation measures outlined in the City of Santa Rosa Tree Ordinance, discussed above, shall be followed.
- A qualified biologist shall monitor trees during construction and the following spring, and shall monitor the growth and survival of the newly planted trees. Revegetation plans shall require monitoring newly transplanted trees for at least five years, and the replacement of all transplanted trees that die during the period. There shall be a 90 percent success rate at the end of the five-year period.

Mitigates:	Impact 3.2.3-2 (I)
Implementation:	Prior to and during construction
Responsibility:	Project sponsor
Monitoring:	Santa Rosa Department of Community Development

Mitigation Measure 3.2.3-2b (I)

The City of Santa Rosa will require application of best management practices during construction within the Southwest Plan Area to reduce impacts to Valley-Foothill Riparian Habitat. The areas that should be avoided and protected during construction include the riparian vegetation along the un-named drainage channel south of Highway 12 and along Roseland and Naval Creeks. Strict adherence to Best Management Practices and successful implementation of a comprehensive mitigation and monitoring plan (3.2.3-2a) could reduce this impact to insignificant. (I)

Best Management Practices shall be included in the plans and specifications for Southwest Plan Area projects. These shall be reviewed in pre-construction meetings with the City of Santa Rosa staff, the City's contractor, and qualified biologists and shall, at a minimum, include provisions that:

- construction drawings shall accurately locate areas to be avoided such as tree trunks, the root-protection zones;
- prior to construction the root-protection zone (1.5 times the canopy area) of sensitive trees shall be fenced using wire mesh fencing;

- construction staging areas be designated on plans and prohibit parking, loading, and grading during all construction activities within root zones of all trees;
- a preconstruction conference be held with contractors to review Best Management Practices and require bonding and fines to ensure the replacement of any inadvertently damaged trees; and
- a tree specialist be consulted during design to accurately locate root protection zones and identify other specific measures that would limit potential indirect impacts on trees that may be encroached upon.

Mitigates:	Impact 3.2.3-2 (I)
Implementation:	Construction specifications and during construction
Responsibility:	Project Sponsor
Monitoring:	Santa Rosa Department of Community Development

Impact 3.2.3-3

Project construction could result in loss of known and potential vernal pool, vernal swale, and freshwater emergent wetland habitat within grassland areas and at creek crossings. Loss of wetland habitat and vernal pools would be a significant impact. (S)

The locations of identified and potential vernal pool wetlands that would be affected are shown in Figure 3.2.3-2. It is estimated that at this time about 40 acres of undelineated, delineated and potential vernal pool habitat could be affected by the remaining residential, commercial and mixed-use projects currently proposed for the Southwest Plan Area.

Mitigation Measure 3.2.3-3a (I)

Impacts to wetland resources shall be avoided or minimized by: (1) relocation of all site improvements from wetlands subject to the jurisdiction of the U.S. Army Corps of Engineers to portions of the property without such wetlands, (2) minimizing or reducing the size and area of site improvements within such wetland areas, (3) restricting the size and areas of construction sites within such wetland areas, or (4) using Best Management Practices. (I)

Mitigates:	Impact 3.2.3-3 (I)
Implementation:	Construction drawings and specifications
Responsibility:	Project sponsor
Monitoring:	Santa Rosa Department of Community Development

Goal OSC-2 of the Open Space and Conservation element of Santa Rosa 2020 establishes a City policy of preservation of vernal pools, wetlands, and rare plant habitat. If wetland impacts are to be avoided, habitat protection such as the use of fencing and buffers are recommended. A

buffer should be established around existing vernal pool habitat. Fences should be to limit foot traffic and exclude off-road vehicles, bicycles, etc. The fencing should be a low profile design for aesthetic reasons and to provide unimpaired views of the wetlands from surrounding areas. The fencing should be designed to discourage public intrusion without interfering with the movement of wildlife.

If wetland impacts cannot be avoided, the following mitigation options are available to project applicants and the City. Such mitigation approaches are consistent with Santa Rosa General Plan Policies OSC-2a, OSC-2b, OSC-2c and OSC-2d, Wetlands and Vernal Pools. Policy OSC-2d states: "Protect high quality wetlands and vernal pools from development or other activities as determined by the Vernal Pool Ecosystem Preservation Plan" As stated in the General Plan, the Santa Rosa Plain Vernal Pool Ecosystem Preservation Plan (1995), is designed to protect the plant and animal life of the vernal pool ecosystem while still allowing development to occur. The Plan identifies areas within the Santa Rosa Plain which may support or contain vernal pool ecosystem habitat, areas which should be considered as potential preserves, and addresses the regulatory process for development in areas containing wetland resources.

Mitigation Measure 3.2.3-3b (I)

For wetland impacts that cannot be avoided or minimized, project developers will (1) prepare a mitigation and monitoring plan in consultation with USFWS and CDFG to replace or restore lost wetland according to Corps guidelines, and either obtain (2) a 1603 Streambed Alteration Agreement from the CDFG or (3) a Section 404 permit to place fill in wetlands from the U.S. Army Corps of Engineers. (I)

Mitigates:	Impact 3.2.3-3 (I)
Implementation:	Prior to construction
Responsibility:	Project sponsor
Monitoring:	Santa Rosa Department of Community Development

Project applicants must apply to the CDFG for a 1603 Streambed Alteration Agreement for any construction within the banks of streams or drainages within the Southwest Plan Area. Under Section 1603 of the State Fish and Game Code, the CDFG has authority to reach an agreement with an applicant proposing to affect intermittent or permanent streams. The CDFG often accepts mitigation for stream course impacts as a product of the agreement. Regardless of whether or not federal action is involved for a given wetland, the project proponent must apply directly to the

CDFG for a Section 1603 permit (Streambed Alteration Agreement) for any proposed impacts to stream or river courses, regardless of the amount of acreage affected. It is the policy of the CDFG that there will be no net loss of either wetland habitat values or acreage, and the 1603 Agreement will set forth construction restrictions and mitigation conditions for the issuance of a permit.

The Corps and the CDFG should be consulted as early as possible in the planning phases of any proposed project, regarding necessary permits and appropriate construction methods.

If not currently completed, project applicants must conduct a formal wetland delineation using established federal protocols to determine the amount of jurisdictional wetland within project areas and within the footprint of proposed infrastructure improvements. To comply with the State and federal no-net-loss wetland policy, a wetland mitigation plan would be developed that would create wetlands at no less than a 1:1 ratio of one acre created or enhanced for each acre lost due to project activities. If feasible, on-site wetland habitat compensation would be preferred, but off-site compensation may be an option, the final decision would be determined in consultation with the appropriate State and federal agencies.

As part of a Section 404 permit, the Corps would require a mitigation and monitoring plan for replacing lost wetland. The replacement ratio could vary depending upon wetland values and extent of impact and is negotiated with the Corps. The Corps also has guidelines for preparing mitigation and monitoring plans, and these should be consulted for format and content. A mitigation plan that would meet Corps requirements is also likely to be acceptable by the CDFG, the State Water Quality Control Board, and the EPA.

The mitigation plan should include performance standards and wetland monitoring procedures as part of the total mitigation plan package prior to approval of the Development Plan and Corps use in the 404 permitting process.

A qualified biologist should monitor restored wetlands during construction and at seasonal intervals. The Mitigation Plans should require monitoring for at least five years, and should

include a contingency plan to insure that wetland habitat values are not reduced over this time period. Because of the uncertainty of many attempts at wetland creation and the expected continued reduction in wildlife habitat value over the course of the minimum 5-year monitoring period, the impact to wetlands would remain significant. Successful completion of the required mitigation would reduce the level of impacts to insignificant as determined by successful restoration of wetlands after the monitoring period.

Impact 3.2.3-4

Project construction within the Southwest Plan Area could alter existing hydrological characteristics of vernal pool/swale systems extending west to the Laguna de Santa Rosa and southwest to the Todd Road Vernal Pool Preserve. This would be a significant impact. (S)

Urban runoff resulting from development envisioned by in the Southwest Plan Area may have a negative effect on vernal pool/swale systems, and associated sensitive plant and animal species, in the Laguna de Santa Rosa. Because the Todd Road Vernal Pool Preserve and areas of the Laguna de Santa Rosa contain several federal and State-listed plant species and several federal proposed and candidate animal species, this impact could be potentially significant to one or more sensitive species. Concerns include pollution, siltation, and downstream flooding. More impervious surfaces within the Southwest Plan Area will result in greater runoff, possibly leading to contamination, flooding, and habitat loss in downstream unincorporated areas. Development projects could adversely modify waterways that are part of ecosystems containing sensitive plant and animal species. National Pollutant Discharge Elimination System (NPDES) permit requirements may reduce the significance of these impacts (see Section 3.2.2, Hydrology and Water Quality).

Mitigation Measure 3.2.3-4 (I)

Implementation of the NPDES permit requirements regarding the implementation of nonpoint pollution source control of stormwater runoff through the application of Best Management Practices could reduce vernal pool/wetland pollution and sedimentation impacts to a level of insignificance. (I)

Mitigates:	Impact 3.2.3-4 (I)
Implementation:	Construction specifications and during construction
Responsibility:	Project Sponsor
Monitoring:	Santa Rosa Department of Community Development

Impact 3.2.3-5

Grading activities during project construction, and the establishment of project landscaping in areas near existing wetlands could inadvertently introduce exotic plant pests to sensitive wetlands, thus decreasing habitat values. (S)

Grading activities could result in the introduction of plant species adapted to disturbed areas into adjacent wetlands. Usually these are “opportunistic” or weedy species that spread aggressively in naturalized areas and displace native plant species, diminish the wildlife habitat values of adjacent wetlands, and increase predation of native wildlife species by creating dense growth which masks the approach of predators. Such species may include French and Scotch broom and pampas grass.

Mitigation Measure 3.2.3-5 (I)

To minimize the expansion of exotic plants into wetlands, only native plant species shall be used for revegetation. Landscaping using native plant species near appropriate buffer areas shall be implemented in accordance with wetlands mitigation and management plans.
(I)

Mitigates:	Impact 3.2.3-5 (I)
Implementation:	Construction drawings and specifications
Responsibility:	Project Sponsor
Monitoring:	Santa Rosa Department of Community Development

The potential establishment and expansion of exotic plant species in to wetland areas from graded areas could be minimized by temporary seeding of disturbed areas with native grass species. Prior to the approval of any project, a buffer zone should be established between proposed residential development and any wetlands located near or on the property. The City’s Creekside Setback Ordinance, Sections 20-05.727 to 20-05.729, sets forth minimum setbacks for new structures from waterways. The setback requirement, although established for public safety and property protection from stream bank failures and flooding, could provide natural corridors for wildlife along waterways and the edges of wetlands. Under the Creekside Setback Ordinance, the actual setback boundaries would be determined in project review by the Building Division of the Community Development Department. Wetland fill projects permitted under Section 404 of the Clean Water Act, as administered by the Corps of Engineers, typically require a range of setback (buffer) requirements for wetlands.

Landscaping within or near the buffer area should consist of native plants only. The developer's landscaping plan should reflect the use of native plants and should be consistent with the goals and recommendations of the California Native Plant Society's Escaped Exotics Committee and the California Exotic Pest Plant Council.

The implementation of this measure would reduce the impact to a less than significant level.

Impact 3.2.3-6

Development within the Southwest Plan Area as assisted through the Redevelopment Plan, will result in loss of grassland foraging area for sensitive bird species known to occur within the Southwest Plan Area. This would be a potentially significant impact. (PS)

Development within the Southwest Plan Area will result in loss of grassland foraging area for the loggerhead shrike, a CDFG Species of Special Concern, and loss of foraging area for several sensitive raptor species, including sharp-shinned hawk, golden eagle and white-tailed kite. Human activity, noise, and disturbance adjacent to grasslands in the Southwest Plan Area could result in degradation of grassland habitat to the extent that it would become unsuitable.

Mitigation Measure 3.2.3- 6 (PS)

There is no feasible mitigation available. As removal of grassland would restrict the area available within the Southwest Plan Area for foraging, this impact would remain potentially significant. (PS)

Impact 3.2.3-7

Development and related activities within the Southwest Plan Area could result in the loss of or damage to sensitive communities and/or to threatened and endangered plants and animals and/or their habitat. This would be a significant impact. (S)

Four Federal- and State-listed Endangered plant species (Burke's goldfields, Sonoma sunshine, Baker's blennosperma and many-flowered navarretia) and a Federal Candidate animal species (California tiger salamander) are known to occur, and habitat is present for several animal species that are Federal Species of Concern or CDFG species of Special Concern in the extensive vernal pool and swale complex located in the western portion of the Southwest Plan Area where the urban boundary encroaches upon the flood plain of the Laguna de Santa Rosa.

California linderiella, a Federal Candidate Species and CDFG Species of Concern, was found at several locations in areas of wetlands that appear not slated for development at this time. California linderiella was also found at the FEMA pool near the Northpoint Parkway (see Figure 3.2.3-3), an area not designated for development. No other invertebrate species in any category of concern were found anywhere on any of the other project sites. No specimens of Ricksecker's water scavenger beetle or San Francisco forktail damselfly were found in habitat that could potentially support these species.

Searches of wetland habitats considered suitable for the breeding and development of the California tiger salamander were conducted by biologists familiar with the amphibian. Eggs of this species were found at several locations not currently planned for development. No tiger salamanders nor their larvae were found in any other aquatic habitats on designated project sites within the Southwest Plan Area. Subsequent field information confirms earlier reports with regard to the distribution of this amphibian within the Southwest Area.

Mitigation Measure 3.2.3-7 (I)

Implement Mitigation Measures 3.2.3-3a, 3.2.3-3b, and 3.2.3-3c. Because California linderiella is a Federal Species of Concern and the vernal pool fairy shrimp is officially listed by the USFWS, appropriately timed late winter and spring surveys of vernal pools and other seasonal standing water bodies shall be conducted by biologists certified to survey for fairy shrimp, according to USFWS Vernal Pool Crustaceon Survey protocol. If avoidance is not feasible, a species recovery plan shall be initiated in conjunction with a wetlands compensation plan involving wetland creation under the direction of USFWS. This would include removal of the topsoil, along with invertebrate eggs or cysts, in areas to be impacted, and transportation of the soil to newly created pools or seasonal wetlands. (I) Avoidance of wetland impacts is the preferred mitigation approach. If impacts to wetlands remain unavoidable, however, wetland habitat compensation would be required (see Mitigation Measure 3.2.3-8).

Mitigates:	Impact 3.2.3-7 (I)
Implementation:	Prior to construction
Responsibility:	Project Sponsor
Monitoring:	Santa Rosa Department of Community Development

Impact 3.2.3-8

Construction activity and practices associated with the proposed projects could adversely affect water quality in creeks and intermittent drainages within the Southwest Plan Area. (S)

The storage of construction materials near creek crossings and the need for construction machinery access could result in direct or indirect impacts to wetland habitat and aquatic life. Construction-related erosion and sedimentation in creek channels or banks could result in a temporary reduction in water quality in the affected watercourses.

Mitigation Measure 3.2.3-8 (I)

~~Construction practices which would avoid siltation or contamination of watercourses would reduce this impact to insignificant.~~ (I) Implement Mitigation Measures 3.2.2-3 and 3.2.2-4 as described in Section 3.2.2, Hydrology and Water Quality.

Mitigates:	Impact 3.2.3-8 (I)
Implementation:	Project drawings and specifications, and during construction
Responsibility:	Project Sponsor
Monitoring:	Santa Rosa Department of Community Development

A CDFG biologist should be consulted regarding construction practices which might be taken to reduce potential impacts to aquatic species. Project plans should include a complete description of methods that will be used to control erosion and prevent silt and deleterious materials from entering waterways. Implementation of these measures would reduce the impact to water quality to insignificant (see also Section 3.2.2, Hydrology and Water Quality).

Impact 3.2.3-9

The removal of trees, shrubs, or grassland vegetation for the construction of projects could result in a "take" resulting from bird nest abandonment and/or the loss of reproductive effort. This would be a violation of Sections 3503, 3503.5, 3513, and 3800 of the State of California Fish and Game Code, and would be a potentially significant impact. (PS)

The bird species observed in the Southwest Plan Area, inclusive of Redevelopment Subareas A and B, are protected by both State (Fish and Game Code Sections 3503 and 3513) and federal (Migratory Bird Treaty Act of 1918) laws. Fish and Game Code Section 3503 states that it is "unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto". Section 3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act. Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered "taking". Under 16 U.S.C 703-711, the

Migratory Bird Treaty Act makes it “unlawful to take” any migratory bird listed in 50 C.F.R. Part 10, including “nests, eggs or products”.

Mitigation Measure 3.2.3-9 (I)

The removal of trees, shrubs, or grassland vegetation shall avoid the February 1 through August 31 bird nesting period. If no construction or tree removal is proposed during the nesting period, no surveys are required. If it is not feasible to avoid the nesting period, a survey for nesting birds shall be conducted by a qualified wildlife biologist no earlier than 45 days and no later than 20 days prior to the removal of trees, shrubs, grassland vegetation, or buildings, or grading or other construction activity. The area surveyed shall include all construction sites, access roads, and staging areas, as well as the areas within 150 feet outside the boundaries of these areas or as otherwise determined by the biologist. In the event that an active nest is discovered in the areas to be disturbed, or in other habitats within 150 feet of construction boundaries, clearing and construction within 150 feet shall be postponed for at least two weeks or until a wildlife biologist has determined that the young have fledged (left the nest), the nest is vacated, and there is no evidence of second nesting attempts. Implementation of this mitigation measure would reduce the potentially significant loss of nests, eggs, or nestlings to the level of insignificant. (I)

Public Projects Program

Infrastructure construction of new roads, roadway widening, storm sewers, sanitary sewers and water supply, would require earth clearing, grading and excavation, backfilling and earth compaction, materials stockpiling and related activities. The need for additional rights-of-way for new roads and road widening projects would be an additional concern.

Many of the construction related impacts discussed for the Development Assistance Program would apply equally to the Public Projects Program. However, there are certain aspects of the Public Projects Program that are unique to the Redevelopment Plan project because of their location, and are discussed here. The following points are noted:

- As discussed under Impact 3.2.3-1, the potential loss of an undetermined number of valley oaks and an undetermined acreage of regenerating valley oaks and Valley Oak Woodland would apply equally to the construction and installation of infrastructure projects. Therefore, Mitigation Measures 3.2.3-1a, 3.2.3-1b and 3.2.3-1c would also apply to infrastructure projects under the Redevelopment Plan Public Projects Program, specifically with respect to drainage improvements and new water mains along Stony Point and South Wright Roads. In addition, It is recommended that the City of Santa Rosa prepare an oak woodland mitigation plan for City infrastructure redevelopment projects prior to approval of plans and specifications. The plan should include tree replacement along roadways or

in the vicinity of Roseland Creek or the intersection of West Robles and Moorland Avenues on soils that are known to support valley oaks. Early consultations and field reviews with representatives from the California Department of Fish and Game (CDFG) and U.S. Fish and Wildlife Service (USFWS) should be initiated by the City of Santa Rosa in order to develop a mitigation plan for the replacement of oaks. The California Native Plant Society and CDFG guidelines for preparing mitigation plans recommend that replacement plants be of the same genetic stock as those lost from project activities. Therefore, it is recommended that the seed for new oaks be collected from trees now existing in the vicinity of a given project.

- Similarly, as discussed under Impact 3.2.3-2, the loss of about 5 to 10 acres of Valley-Foothill Riparian Woodland habitat would be a concern with respect to infrastructure projects, especially the construction of drainage improvements at Naval Creek and in the vicinity of Roseland Creek and the drainage swale located south of Highway 12 between North Wright and Fern Roads. Mitigation measures 3.2.3-2a and 3.2.3-2b would apply equally to infrastructure projects.
- As discussed under Impact 3.2.3-3, the loss of known and potential vernal pool, vernal swale, and freshwater emergent wetland habitat within grassland areas and at creek crossings would be a significant impact. Infrastructure projects supported through the Redevelopment Plan project could contribute to this impact. For example, proposed road projects (may or may not be financed through the Redevelopment Plan), potentially affecting vernal pool habitat include:
 - 1) The Bellevue-Ludwig Connector: a new 4-lane road between Colgan Creek Channel and Ludwig Avenue.
 - 2) The Fresno Avenue-South Project (southernmost portion): a new 2- to 3-lane road between Northpoint Parkway and Ludwig Avenue.
 - 3) The Fulton/Wright Interchange Project: a 4- to 6-lane facility located on State Highway 12.
 - 4) The Northpoint Parkway-East Project (vicinity of Roseland Creek Channel): a new 4-lane road between Stony Point Road and the southern portion of Dutton Avenue.
 - 5) The Northpoint Parkway-West Project (vicinity of South Wright Road): a new 4-lane road between Corporate Center and Fresno Avenue and a new 3-lane road between Fresno Avenue and South Wright Road.

The crossing of Colgan Creek by the Northpoint Parkway-East Project may affect freshwater emergent wetland habitat within the flood control channel.

An undetermined acreage of undelineated, potentially jurisdictional wetlands could be affected by the construction of water distribution system improvements. Affected areas include vernal pool systems along or near the proposed water main alignments between Bellevue Avenue and Ludwig Avenue, between Northpoint Parkway and South Wright

Road (near Santa Rosa Air Center), and between Ludwig Avenue and Northpoint Parkway (also near the Santa Rosa Air Station). Most of the water mains that would impact wetlands are proposed for locations within road right-of-ways. In this way, impacts on vernal pools would be minimized or avoided. The proposed SCWA Water Intertie which traverses the Southwest Plan Area, however, may affect vernal pools south of Northpoint Parkway between South Wright Road and Corporate Center Parkway.

An undetermined acreage of undelineated, potentially jurisdictional wetlands could be affected by the construction of drainage improvements within the Southwest Plan Area. These include vernal pool systems along or near Naval Creek and the northern portion of the Stony Point Road North Conduit.

Construction of these infrastructure projects (and residential and commercial development within the entire Southwest Plan Area) could alter existing hydrological characteristics of the vernal pool/swale system, or result in removal of habitat through grading or fill activities. Therefore Mitigation Measures 3.2.3-3a and, 3.2.3-3b would apply equally to infrastructure projects. In addition, the following mitigation measure is provided for infrastructure projects:

Mitigation Measure 3.2.3-3c (I)

For wetland impacts that cannot be avoided or minimized, the City of Santa Rosa will prepare a mitigation and monitoring plan for City-sponsored infrastructure projects to conserve, replace and restore wetlands within or near the Southwest Plan Area. The City will also insure that a mitigation and monitoring plan be prepared for independently sponsored development projects to conserve, replace and restore wetlands within or near the Southwest Plan Area. (I)

Mitigates:	Impact 3.2.3-3 (I)
Implementation:	Prior to construction. Include in project drawings and specifications, and monitor during construction
Responsibility:	Santa Rosa Department of Public Works
Monitoring:	Santa Rosa Department of Community Development

- As discussed under Impact 3.2.3-4, the alteration of existing hydrological characteristics of vernal pool/swale systems extending west to the Laguna de Santa Rosa and southwest to the Todd Road Vernal Pool Preserve would be a significant impact. The impact could be exacerbated because of infrastructure construction supported through the Redevelopment Plan project, including infrastructure construction in combination with privately sponsored development as a cumulative impact. Street, road, or highway projects could adversely modify waterways that are part of ecosystems containing sensitive plant and animal species. National Pollutant Discharge Elimination System (NPDES) permit requirements may reduce the significance of these impacts. Therefore, Mitigation Measure 3.2.3-4 would apply equally to infrastructure projects. Street, road, and highway projects should be neither designed nor implemented without soliciting referral agency

input early in the planning process. Refer also to the discussion on flood control in Section 3.2.2, Hydrology and Water Quality.

- The potential introduction of damaging exotic plant species through street and median landscaping would be a concern with respect to new roadway projects, and Impact and Mitigation Measure 3.2.3-5 would apply equally to infrastructure projects.
- The loss of grassland foraging area under any form of development as noted under Impact 3.2.3-6 would remain a potentially significant impact for which there is no mitigation. Potential impacts to sensitive communities and/or threatened and endangered plants and animals and/or their habitat as explained under impact 3.2.3-7 would apply equally to infrastructure projects and Mitigation Measure 3.2.3-7 would be required. Water quality impacts and mitigation measures as discussed under Impact and Mitigation Measure 3.2.3-8 would apply equally to infrastructure projects.

Impact 3.2.3-10

The construction of new roads (Fresno Avenue-South, Northpoint Parkway-West, and Bellevue-Ludwig Connector) and the improvement of existing roads (Ludwig Avenue) could result in disruption and wildlife mortality in areas of known wildlife migration or movements. (S)

New roads in areas of known or suspected wildlife movements such as existing vernal pools, wetlands and other low-lying drainage areas, could provide a barrier to wildlife migration within the Southwest Plan Area. Daily or seasonal movement of wildlife may be adversely affected by such barriers. Local populations of those animals unable to cross the physical barriers potentially could be fragmented. For those more mobile wildlife species able to cross new roads, vehicle traffic on proposed new roadways may increase the incidences of road kills.

Mitigation Measure 3.2.3-10 (I)

- Vernal pools which are in the direct line of new roads or new road alignments shall be relocated as near their original position and condition as possible. Implement Mitigation Measures 3.2.3-3a, 3.2.3-3b and 3.2.3-3c.
- Solid road dividers which would hinder salamander migration shall not be used to divide roadways located within one mile of pools or the known migration area.
- Under-road culverts for tiger salamanders shall be incorporated into the design of new or improved roadways adjacent to all known wetlands where salamander migration routes have been identified.

Mitigates: Impact 3.2.3-10 (I)

Implementation: Prior to construction (vernal pools). Include in project drawings and specifications, and monitor during construction.

Responsibility: Santa Rosa Department of Public Works

Monitoring: Santa Rosa Department of Community Development

The use of sufficiently sized under-road culverts and other underground passageways could provide movement corridors between wetlands or drainage areas for amphibians, reptiles, and small mammals.

Housing Program

The Housing Program provides assistance to build, improve, and preserve low and moderate income housing. Redevelopment financing for these activities would not impact biological resources within Redevelopment Areas A or B, but could generate impacts to biological resources through the stimulation of development within Redevelopment Subareas A or B, or the Southwest Plan Area as a whole. Therefore, the discussion of biological resources impacts and mitigation measures as addressed under the Development Assistance Program would apply equally to the Housing Program.

3.2.4 AIR QUALITY

SETTING

Regulatory Setting

Air quality is characterized by the presence of pollutants that fall into two basic categories. Criteria air pollutants refer to a group of pollutants for which regulatory agencies have adopted ambient air quality standards and pollution reduction plans. Criteria air pollutants include ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter, and lead.¹ Emissions of reactive organic gases (ROG) and nitrogen oxides (NO_x) are regulated as precursors to ozone formation. Toxic air contaminants refer to a category of air pollutants that pose a present or potential hazard to human health, but which tend to have more localized impacts than criteria air pollutants. This Air Quality section addresses routinely emitted toxic air contaminants.

■ **Ambient Air Quality Standards**

The major federal, state, and local control efforts tend to focus on six “criteria” air pollutants and their precursors. Based on the authority of the federal Clean Air Act, including the 1990 amendments, and the California Clean Air Act, federal and state regulatory agencies set upper limits (ambient standards) on the airborne concentrations of the six criteria pollutants. These defined limits are designed to protect all segments of the population including those most susceptible to the pollutants’ adverse effects (e.g., the very young, the elderly, people weak from illness or disease, or persons doing heavy work or exercise).

The U.S. Environmental Protection Agency (EPA) develops and is responsible for updating the National Ambient Air Quality Standards (NAAQS), and the California Air Resources Board (ARB) is responsible for establishing the California Ambient Air Quality Standards. The ambient air quality standards for the ozone, carbon monoxide, and particulate matter less than 10 microns in diameter (PM₁₀) are summarized in Table 3.2.4-1.

■ **Air Quality Management Plans**

The federal Clean Air Act, as amended, and the California Clean Air Act are the primary drivers for attaining and maintaining the ambient air standards. These laws require preparation of air quality management plans for areas with air quality conditions exceeding the ambient air quality standards. The 1990 amendments to the federal Clean Air Act specifically require that projects involving federal funding demonstrate conformity with

TABLE 3.2.4-1
NATIONAL AND STATE AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	National Standard	California Standard
Ozone	1-hour	0.12 ppm	0.09 ppm
	8-hour	0.08 ppm	--
Carbon Monoxide	1-hour	35.0 ppm	20.0 ppm
	8-hour	9.0 ppm	9.0 ppm
PM ₁₀	24-hour	150 $\mu\text{g}/\text{m}^3$	50 $\mu\text{g}/\text{m}^3$
	annual	50 $\mu\text{g}/\text{m}^3$	30 $\mu\text{g}/\text{m}^3$

Notes:

ppm = parts per million

 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter*Source:* California Air Resources Board.

existing air quality management plans. Through these laws, the implementing agencies develop mobile and stationary source performance standards and emission control programs.

The Bay Area Air Quality Management District (BAAQMD) is the primary agency responsible for planning, implementing, and enforcing the federal and state ambient standards in the Bay Area. During 1999, the BAAQMD revised the region's State Implementation Plan (SIP). The SIP is a compilation of plans and regulations that govern how the region and state will comply with the federal Clean Air Act requirements to attain and maintain the ozone standard. Along with the BAAQMD, the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) also contribute to the SIP. The region was required to revise the SIP in 1999 because the federal 1-hour ozone standard was exceeded in 1995 and 1996. The state ozone and particulate matter standards are also exceeded in the region. The BAAQMD prepared the 1997 Clean Air Plan to demonstrate how the region would meet the state ozone standard. No state plan is required to show improvement toward meeting state particulate matter standards. The BAAQMD's 1997 Clean Air Plan includes specific measures to reduce ground level ozone by reducing emissions of ozone precursors. As required by the California Clean Air Act, the Clean Air Plan's measures must be feasible and expeditiously adopted.²

■ Regional Conformity

The Metropolitan Transportation Commission is required to assess the conformity of the Regional Transportation Plan with the existing State Implementation Plan (SIP). The MTC cannot approve any plan or program unless the activity conforms to the SIP. Highway and transit projects that may be funded over the next 20 years are included in the 1998 Regional Transportation Plan, and the 1999 Transportation Improvement Program includes the financially realistic projects for the next six years.³

■ **City of Santa Rosa**

At the local level, air resources are typically protected through community policy. The City of Santa Rosa addresses air quality issues in the Open Space and Conservation Element of the General Plan. The following goal and policies are outlined in the General Plan (Vision 2020).

[Goal OSC-11] To maintain good air quality.

Policies

[OSC-11a] Use existing regulations and the land use and circulation policies of the general plan to meet federal and state standards and, where possible, to maintain air quality superior to those standards by:

- Encouraging the maximum use of public transit;
- Promoting participation in Transportation Systems Management programs to reduce the number of single occupant vehicles. This, in turn, may reduce ozone, carbon monoxide, and particulate matter;
- Ensuring the distribution of land uses and the configuration of the circulation network help minimize commuting; and
- Supporting the continuing monitoring by the Bay Area Air Quality Management District.

■ **Toxic Air Contaminants Regulatory Background**

Toxic air contaminants are those which may have the potential to cause cancer or may pose a present or potential acute or chronic hazard to human health. As with criteria pollutants, these are also regulated through federal, state, and local programs. However, there are no regional ambient standards for toxic air contaminants; this is primarily due to the localized nature of the adverse health impacts caused by toxic air contaminant emissions. Mobile sources are not directly regulated as sources of toxic air contaminants, except for lead. Indirect control of toxic air contaminants, including lead, from mobile sources is generally achieved through fuel efficiency standards and reformulation of fuels.

Climate

The San Francisco Bay Area's regional meteorological conditions are cool and dry in the summers and mild and moderately wet in the winters. Air quality in Santa Rosa is influenced by terrain effects and the ocean breezes that travel through the Petaluma and Cotati Valleys. Winds from the south and southwest are the most prevalent in Santa Rosa. These are the breezes that travel from the Pacific Ocean to Sonoma County through the Petaluma Gap (roughly between Bodega Bay and Petaluma) and are channeled by the Sonoma Mountains to the east. Sea breezes traveling to Santa Rosa via the Petaluma Gap and opposing sea breezes via the Russian River Valley to the

west-northwest provide relatively clean air to Santa Rosa. When the ocean breeze is weak however, strong winds from the east can dominate and carry pollutants to Santa Rosa from the Carquinez Strait area. Air quality in Santa Rosa is superior to that of many other valley cities in the Bay Area because of the city's location, the terrain, and the clean ocean breeze.

The climate of Santa Rosa is typical of the Bay Area's interior valleys, tempered by exposure to sea breezes. Summer monthly maximum average temperatures are in the low-80's °F, and winter monthly minimum average temperatures are in the high-30's °F. Santa Rosa receives about 30 inches of precipitation with most of it occurring in the winter months.

Existing Air Quality

The nine-county San Francisco Bay Area Air Basin has a history of recorded violations of federal and state ambient air quality standards for ozone, carbon monoxide, and particulate matter. Since the early 1970s, substantial progress has been made toward controlling these pollutants. The progress has led the area to attaining all state and federal standards except those for ozone and PM₁₀. For ozone, the Bay Area does not meet either the state or federal standard (i.e., the Bay Area is an ozone nonattainment area for state and federal purposes). For particulate matter less than 10 microns in diameter (PM₁₀), the Bay Area does not meet the state standard, but the area does meet the federal standard (i.e., the Bay Area is a PM₁₀ nonattainment area for state purposes only).

The BAAQMD operates an air quality monitoring station on Fifth Street in Santa Rosa. This location is representative of conditions in the Southwest Plan Area. The available air quality data from the Santa Rosa station shows the following:⁴

- During the period of 1992 through 1998, the state 1-hour ozone standard was exceeded on one day in 1995. The federal ozone standards were not exceeded on any day through the period. During this period, state and federal standards were exceeded numerous times in the eastern part of the district and in the Santa Clara Valley.
- During the period of 1992 through 1997, the state and federal carbon monoxide standards were not exceeded anywhere in the Bay Area. Over the past three years of data, the highest 1-hour carbon monoxide concentration monitored in Santa Rosa was 5.6 ppm, and the highest 8-hour concentration was 3.3 ppm. (The existing conditions of localized

carbon monoxide concentrations near congested intersections in the Southwest Plan Area are summarized with the discussion of project impacts below.)

- During the period of 1994 through 1997, the state 24-hour PM_{10} standard was exceeded on fewer than 3 percent the days sampled each year, the federal 24-hour standard was not exceeded at all, and the state and federal annual standards were not exceeded at all. The federal standards were not exceeded in the district.

The regional and local air quality shows that the region has made considerable progress toward meeting the state and federal standards. At this time, the region does not meet ozone or state particulate matter standards. Through 1999, violations of the state and federal standards for ozone continue to persist.

Sensitive Receptors

Sensitive receptors is a term given to those members of the population which are most sensitive to the adverse health effects of air pollution. The term sensitive receptors refers to specific population groups as well as their associated land uses. The following land uses are considered to be locations of sensitive receptors: residences, schools, playgrounds, child care centers, retirement homes, convalescent homes, hospitals, and clinics. These uses occur throughout the Southwest Plan Area.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

The BAAQMD suggests that a project would have a significant air quality effect if it would (1) conflict with applicable air quality plans, (2) violate any ambient air quality standard, or contribute substantially to an existing or projected air quality violation, (3) result in a cumulatively considerable net increase of any nonattainment pollutant, (4) expose sensitive receptors to substantial pollutant concentrations, or (5) permeate its vicinity with objectionable odors. More specifically, in the 1996 BAAQMD CEQA Guidelines, project-level air quality impacts are considered significant if a proposed project would:

- Cause construction-related emissions and fail to implement feasible control mitigation measures for construction emissions shown in Table 2 of the 1996 BAAQMD CEQA Guidelines;
- Cause project-level operational impacts from combined stationary and mobile source emissions of more than 80 pounds per day of ROG, NO_x, or PM₁₀.
- Cause localized carbon monoxide concentrations at congested intersections to exceed the State or federal ambient air quality standards: 20 ppm (1-hour), or 9 ppm (8-hours);
- Frequently expose the public to objectionable odors.
- Expose the public to toxic air contaminants in excess of the following thresholds:
 - Probability of contracting cancer exceeds 10 in 1 million for the maximally exposed individual (MEI).
 - Ground-level concentrations of noncarcinogenic toxic air contaminants would result in a hazard index greater than 1 for the maximally exposed individual.⁵
- Result in a cumulatively considerable net increase of any nonattainment pollutant.

To determine if implementation of the Redevelopment Plan programs would conflict with regional air quality plans, the BAAQMD recommends that the plan impacts be evaluated in terms of population and vehicle emissions increases. If implementation of the Redevelopment Plan causes population growth to exceed the projections of the 1997 Clean Air Plan (based on ABAG's *Projections '96*, December 1995), or causes the rate of increase in vehicle miles traveled to exceed the rate of population increase, then plan-level impacts would be considered significant.

In accordance with updated traffic counts, recent street network improvements and some residential construction since 1994, local air quality conditions are updated herein, as is the necessary assessment of short-term impacts and long-term effects of stationary and mobile emission sources.

As noted previously, (refer to the *Introduction* section of this SEIR), impacts in this SEIR are projected to the year 2010 consistent with the buildout assumptions contained in the Southwest Area Plan.

Development Assistance Program

The Development Assistance Program basically provides redevelopment financing for land acquisition, deteriorated structure removal, site preparation, relocation assistance, hazardous materials remediation and the removal of concrete runways at the Air Center. Redevelopment financing assistance for these activities could impact air quality through activities of deteriorated structure removal, site preparation and the removal of Air Center concrete runways within Redevelopment Subareas A and B.

Potential air quality impacts resulting from the construction of privately sponsored residential, commercial and mixed-use projects include construction-related air emissions, impacts caused by increased regional vehicular and stationary source emissions, and emissions related to potential toxic air contaminants.

Impact 3.2.4-1

New construction as assisted through the Redevelopment Plan Development Assistance Program would result in construction-related activities that could conflict with regional air quality planning efforts. This is considered to be a temporary and potentially significant impact. (PS)

The Development Assistance Program would stimulate new construction activities throughout Redevelopment Subareas A and B, and the Southwest Plan Area in general. Construction-related activities would cause dust to be generated and equipment exhaust to be emitted. These emissions would be likely to cause a nuisance at sensitive receptors that may be near the specific project under construction, and, without implementation of control measures, the emissions could conflict with regional air quality planning efforts that rely on the control of construction emissions.

Site construction activities of housing, commercial and mixed-use projects would each involve activities that would cause air quality to be affected throughout the duration of construction. The schedules for specific project construction are not yet known. Throughout the planning period, construction emissions would be expected to occur but would vary widely depending on the specific project or combination of projects in progress at any given time. When considered in the context of long-term operations of the Southwest Plan Area, construction-related emissions would

be considered to be short-term and temporary, but these activities could still cause significant effects on local and potential regional air quality.

Miscellaneous activities at construction sites could cause dust to become airborne. These emissions could be caused by site clearing, excavation and grading operations, construction vehicle traffic on unpaved ground, transfer of dry materials, and wind blowing over exposed, loose surfaces. The primary pollutant of concern in construction dust would be PM_{10} . Larger particles would settle out on exposed surfaces near the sources.

Operation of heavy construction equipment could require combustion of gasoline or diesel fuel which would result in tailpipe emissions of ROG, NO_x , CO, SO_2 , and particulate matter. Similar emissions would also be caused by construction worker vehicles and material delivery trucks traveling to and from the construction sites.

Additional emissions of reactive organic gases, including potential emissions of toxic air contaminants, could be generated during painting (or surface coating) and asphalt paving associated with some of the construction activities. The reactive organic compound (ROG) emissions would be caused by the paving equipment used to apply asphalt products and from asphalt on freshly constructed road or parking lot surfaces.

The BAAQMD has developed an analytical approach that obviates the need to quantitatively estimate construction emissions.⁶ The BAAQMD has included equipment exhaust emissions of carbon monoxide and ozone precursors in the emission inventory that is the basis for regional air quality planning and does not consider these emissions to impede attainment or maintenance of CO or ozone standards. Emissions of reactive organic compounds (ROG), and associated toxic air contaminants, caused by coating and paving products would be minimized through existing BAAQMD rules and regulations which limit use of products containing high levels of reactive compounds. Emissions caused by these activities would therefore generate insignificant impacts.

To reduce emissions of fugitive dust, the BAAQMD has identified a set of feasible PM_{10} control measures for construction activities. Depending on which project would be under development

at any given time, implementation of the mitigation measures below, as appropriate, would reduce construction-related air quality impacts to an insignificant level. This would apply to infrastructure projects as well as privately sponsored projects under the Public Projects Program and Housing Program (see below).

Mitigation Measure 3.2.4-1 (I)

Implementing the following measures (as specified by the 1996 BAAQMD CEQA Guidelines) would reduce construction-related air quality impacts to an insignificant level.
(I)

- Control of Construction and Demolition-related Air Emissions. Each project sponsor and contractor shall implement the following control measures based on the BAAQMD guidelines:
- For all construction sites:
 - Cover all trucks hauling construction and demolition debris from the site;
 - Water on a continuous as-needed basis, all earth surfaces during clearing, grading, earthmoving, and other site preparation activities;
 - Use watering to control dust generation during demolition of structures or break-up of pavement;
 - Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved parking areas and staging areas;
 - Sweep daily (with water sweepers) all paved parking areas and staging areas;
 - Provide daily clean-up of mud and dirt carried onto paved streets from the site;
- For construction sites near sensitive receptors:
 - Install wheel washers for all existing trucks, or wash off the tires or tracks of trucks and equipment leaving the site;
 - Suspend dust-producing activities during periods when instantaneous gusts exceed 25 mph when dust control measures are unable to avoid visible dust plumes;
 - Limit the area subject to excavation, grading and other construction or demolition activity at any one time;
- For sites greater than four acres:

- Apply soil stabilizers to previously graded portions of the site inactive for more than ten days or cover or seed these areas;
- Water or cover stockpiles of debris, soil, sand, or other materials that can be blown by the wind;
- Limit traffic speeds on unpaved roads to 15 miles per hour;
- Replant vegetation in disturbed areas as quickly as possible.

Mitigates:	Impact 3.2.4-1 (I)
Implementation:	Include in construction specifications prior to approval of final project plans and issuance of building permits.
Responsibility:	Individual project sponsors.
Monitoring:	Santa Rosa Department of Community Development

Impact 3.2.4-2

Impacts related to implementation of the Development Assistance Program would include increases in localized carbon monoxide concentrations at congested intersections and along arterial corridors and freeway mainlines. This is considered to be an insignificant impact. (I)

Since certification of the Southwest Area Plan EIR in 1994, conditions of the transportation network in the Southwest Plan Area have changed through some street improvement projects (i.e., the reconstruction of Hearn Avenue from Stony Point Road to Dutton Avenue and the west portion of Sebastopol Road near South Wright Road). Based on up-to-date traffic counts gathered for this SEIR, the localized CO concentrations expected to occur at congested intersections were reevaluated.

Localized CO concentrations near congested intersections were estimated using Caltrans' CALINE4 program and the CO Protocol from the Institute of Transportation Studies to identify "worst-case" air quality conditions at the most severely impacted intersections.^{7, 8} As recommended by the BAAQMD CEQA Guidelines, worst-case conditions are considered by placing receptors in locations that yield maximum exposure and by assuming a stable atmosphere where dispersion of CO in the vicinity of the intersection would be minimal.⁹ Intersections were selected for analysis based on the severity of traffic congestion identified in the Transportation analysis of this SEIR and the intersection's proximity to air-quality-sensitive land uses, such as residential areas. Congestion along arterial corridors and freeway mainlines would also cause increased CO concentrations, but because the congestion most likely to affect sensitive receptors

would be centered about intersections in the Plan Area, the highest concentrations would be expected to occur in the vicinity of the intersections. The intersections were selected as follows.

Intersections with a Level of Service (LOS) of D, E or F are considered to be potential locations for CO “hot-spots.” These are the worst-performing intersections. Intersections performing with LOS A, B or C would not cause a CO “hot-spot.” The CALINE4 model is used to estimate CO concentrations 25 feet from the intersections under existing (1999) traffic conditions and future (2010) conditions with and without transportation system mitigation measures.

Under existing and future traffic conditions, both with and without traffic mitigations, CO concentrations related to increased congestion would not violate the ambient air quality standards. Table 3.2.4-2 shows that future congestion at these intersections would generate maximum concentrations of up to 7.6 ppm of CO on a one-hour basis and 4.6 ppm on an eight-hour basis.

Mitigation Measure 3.2.4-2

None Required.

Public Projects Program

The infrastructure projects would not result in the construction or operation of new stationary sources of pollution. For example, no pumping stations or treatment facilities are known to be included with the proposed infrastructure projects. This discussion is based on the assumption that implementation of the Public Projects Program would not generate new vehicle trips or cause vehicle trips to lengthen.

Because the infrastructure improvements would not include new stationary sources and no change in vehicle trips or trip characteristics would be expected to occur, no direct or indirect air quality impacts would occur during long-term operation of the infrastructure projects. However, construction-related impacts that would be caused by the Public Projects Program would be as discussed under Impact and Mitigation Measure 3.2.4-1 and would apply equally to the Public Projects Program. This is because the Public Project Program would include the installation of

TABLE 3.2.4-2
LOCALIZED CO CONCENTRATIONS AT SELECTED INTERSECTIONS

Intersection - Location	Total CO Concentrations (ppm) ¹			
	Ambient Air Quality Standard ²	Existing 1999	Future w/o Mitigation 2010	Future w/ Mitigation 2010
1- Northpoint / Stony Point	1-hour: 20 ppm	6.6	6.6	5.3
	8-hour: 9 ppm	4.0	3.9	3.1
2 - Sebastopol / Stony Point	1-hour: 20 ppm	7.9	6.5	5.8
	8-hour: 9 ppm	4.8	3.9	3.5
3 - Hearn / Stony Point	1-hour: 20 ppm	9.5	6.1	4.9
	8-hour: 9 ppm	5.7	3.7	2.9
4 - Bellevue / Stony Point	1-hour: 20 ppm	6.4	6.3	5.6
	8-hour: 9 ppm	3.9	3.8	3.3
5 - Todd / Stony Point	1-hour: 20 ppm	6.2	6.1	5.1
	8-hour: 9 ppm	3.7	3.7	3.0
6 - Wright-Fulton / Hwy 12 Ramps	1-hour: 20 ppm	8.7	6.4	5.1
	8-hour: 9 ppm	5.3	3.8	3.0
7 - S. Wright / Sebastopol	1-hour: 20 ppm	6.7	6.0	5.1
	8-hour: 9 ppm	4.0	3.6	3.0
8 - Corp Ctr / Sebastopol	1-hour: 20 ppm	6.2	4.1	4.0
	8-hour: 9 ppm	3.7	2.4	2.4
9 - Corp Ctr / Northpoint	1-hour: 20 ppm	5.2	4.7	4.3
	8-hour: 9 ppm	3.1	2.7	2.5
12 - Dutton / Sebastopol	1-hour: 20 ppm	11.3	7.6	5.7
	8-hour: 9 ppm	6.9	4.6	3.4
13 - Hearn / Dutton	1-hour: 20 ppm	8.8	5.9	5.6
	8-hour: 9 ppm	5.3	3.5	3.3
14 - Dutton / Bellevue	1-hour: 20 ppm	5.8	6.6	6.0
	8-hour: 9 ppm	3.5	4.0	3.6
15 - Hearn / Corby	1-hour: 20 ppm	10.3	6.1	5.8
	8-hour: 9 ppm	6.2	3.6	3.4
16 - Baker / Corby	1-hour: 20 ppm	6.4	4.4	4.4
	8-hour: 9 ppm	3.9	2.6	2.6
18 - Bellevue / 101 SB Ramps	1-hour: 20 ppm	N/A	4.6	4.4
	8-hour: 9 ppm	N/A	2.7	2.6
19 - Bellevue / 101 NB Ramps	1-hour: 20 ppm	N/A	7.1	7.1
	8-hour: 9 ppm	N/A	4.3	4.3
20 - Bellevue OC / Santa Rosa Av	1-hour: 20 ppm	N/A	6.7	6.7
	8-hour: 9 ppm	N/A	4.1	4.1

Notes:

1. Total concentrations are based on CALINE4 output with background ambient CO concentrations of 4.4 ppm (1999) and 3.3 ppm (2010) for a 1-hour averaging time and 2.6 ppm (1999) and 1.9 ppm (2010) for an 8-hour averaging time.
2. The State one-hour standard is 20 ppm, and the State and Federal eight-hour standard is 9 ppm.

Source: EIP Associates, 2000.

major roadway projects, and modifications to the water, sewer and storm drain systems. To the extent these infrastructure projects would be growth accommodating, they would also be considered growth stimulating (consistent with the land uses identified in the Southwest Area Plan), by removing impediments to new construction by the private sector throughout the Southwest Plan Area.

In addition to Impact 3.2.4-1, the following impact is identified for the Public Projects Program.

Impact 3.2.4-3

Implementation of the Public Projects Program would stimulate development of roadway and circulation projects that would result in general improvement of the regional air quality. This is a beneficial impact. (B)

Roadway and circulation improvements would cause air quality benefits by relieving congestion. The impact on regional air quality would be a benefit because the improvement projects would result in better traffic flow, higher travel speeds, and decreased vehicular emissions.

Mitigation Measure 3.2.4-3

None required.

Housing Program

The Housing Program provides assistance to build, improve and preserve low and moderate income housing. Redevelopment subsidies for these activities would not directly impact air quality. However, the Housing Program could indirectly generate impacts to air quality through the stimulation of development and housing construction activities, and/or the removal of impediments to development and housing construction activities, within Redevelopment Subareas A or B, or the Southwest Plan Area as a whole. This would result from the various private and public projects as described in the Southwest Area Plan and Southwest Area Plan EIR. Therefore, the discussion of air quality impacts and mitigation measures (Impact 3.2.4-1 and 3.2.4-2) under the Development Assistance Program would apply equally to the Housing Program.

Increased vehicular, home heating, home cooling, and wood burning emissions caused by development as assisted through the Redevelopment Plan, including the Housing Program, would be as described in the Southwest Area Plan EIR. It was shown that the Southwest Area Plan in the year 2010 would generate approximately 2,989 pounds per day of total organic gases, 35,188 pounds per day of carbon monoxide, 4,961 pounds per day of nitrogen oxides, 1,476 pounds per day of PM₁₀, and 531 pounds per day of sulfur oxides vehicular emissions. These emissions for the year 2010 would represent over 1% of the carbon monoxide, nitrogen oxides, PM₁₀, and sulfur oxides produced by vehicles in the county, and was listed as a significant unavoidable adverse air quality impact. In addition, it was shown that wood burning emissions from new development could result in an estimated 44 tons per year of particulates and 2,253 tons per year of carbon monoxide emissions. However, population and employment growth to 2010 for the City of Santa Rosa and Sonoma County projected by the Redevelopment Plan and addressed in the 1994 EIR were within the growth levels in ABAG's Projections '96 which was published subsequent to the Southwest Area Plan EIR. The most recent regional plans for air quality (the 1997 Clean Air Plan and the 1999 revision to the State Implementation Plan) are based on ABAG's Projections '96. The projections are used to forecast emissions growth due to increased vehicular activity and increased activity of stationary sources such as home heating and cooling. Since ABAG's growth estimates and, as such, the BAAQMD's planning emissions inventory, each account for implementation of the Southwest Area Plan (and by implication the Redevelopment Plan), the projected growth would not currently conflict with regional air quality planning efforts and the previously identified significant air quality impact would no longer apply.

Notes - Air Quality

1. National Ambient Air Quality Standards have been established for criteria pollutants, named for the "criteria" documents that justified their regulation.
2. BAAQMD, *1997 Clean Air Plan*, and Triennial Assessment. Adopted by the Board of Directors, December 17, 1997.
3. Results of the regional conformity analysis are included in the MTC's 1998 Regional Transportation Plan and 1999 Transportation Improvement Program.
4. California Air Resources Board, *Ozone Data Summary (1992-1997)* and *PM₁₀ Air Quality Data Summaries (1993-1997)*. Available at www.arb.ca.gov/aqd/aqd.htm.

5. The maximally exposed individual (MEI) is the hypothetical person whose exposure to toxic air contaminants from a project results in the greater risk. For residential receptors, the MEI is assumed to live near the source all his or her life (assumed to be 30 years [based on U.S. EPA Risk Assessment Guidelines] or 70 years [based on Air Toxic "Hot Spots" Risk Assessment Guidelines]). The hazard index is the ratio of expected exposure to the acceptable level of exposure.
6. BAAQMD, *CEQA Guidelines, Assessing the Air Quality Impacts of Projects and Plans*, April 1966, Chapter 2.3, Thresholds of Significance, pp. 12-13.
7. CALINE4 - A Dispersion model for Predicting Air Pollutant Concentrations Near Roadways, California Department of Transportation, Division of New Technology and Research, June 1989.
8. Institute of Transportation Studies, University of California, Davis, *Transportation Project-Level Carbon Monoxide Protocol*, revised December 1997.
9. BAAQMD, *CEQA Guidelines, Assessing the Air Quality Impacts of Projects and Plans*, April 1996, Table 10, p. 35.

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3.2.5 NOISE

SETTING

Fundamentals of Environmental Noise

Sound is caused by pressure vibrations in air. The sound level is the intensity of the pressure vibrations, and it is most often measured in terms of decibels (dB).¹ Although the decibel scale describes the pure physical intensity of sound, it cannot accurately describe loudness as perceived by the human ear. The pitch or frequency of a sound must be taken into account when measuring human response to sound. For this reason, a frequency-dependent weighting system is employed whenever noise is measured for the human perspective. Noise levels caused by traffic and other urban activities are usually considered in terms of decibels on the A-weighting scale (dBA). Generally, a difference of 3 dB is noticeable to most people and a difference of 10 dB is perceived as a doubling of loudness. Each 3 dB increase or decrease in sound level represents approximately two-times or one-half, respectively, of the sound intensity.

Because environmental noise fluctuates over time, several statistical indicators have been developed to describe environmental noise. Two of the most commonly used indicators are L_{eq} and L_{dn} .^{2, 3} The equivalent energy indicator, L_{eq} , is an indicator of cumulative noise exposure presented over a stated time period, usually one-hour; the day-night average, L_{dn} , is a 24-hour average which accounts for the greater sensitivity of most people to nighttime noise. Community Noise Equivalent Level (CNEL) is also a 24-hour average, like L_{dn} , but is further weighted for sensitivity to evening noise.⁴ These and other indicators are used to describe noise from different sources in different environments. For example, L_{dn} and CNEL are often used to describe general community noise levels, as they penalize nighttime and evening noise. The L_{eq} over a one-hour period (hourly L_{eq}) is used when the either the noise is short in duration, or the receptor is sensitive to short-term noise levels.

Noise levels from a particular source generally decline as distance to the receptor increases. Other factors such as the weather and reflecting or shielding also help intensify or reduce the noise level at any given location. Noise from a single piece of equipment is typically reduced by approximately 6 dB for every doubling of distance from the source, and noise from a roadway or highway (a line of source) is typically reduced by approximately 3 dB for each doubling of

distance.⁵ Noise levels are also reduced by intervening obstructions—generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dB.⁶

Community noise can interfere with sleep, communication, recreation, tasks demanding concentration, and, in extreme cases, it can lead to hearing loss. Public annoyance increases when environmental noise interferes with human activities or contributes to stress. In general, land use planning policies intend to prevent exposure to excessive community noise levels. Table 3.2.5-1 lists some examples of common environmental and community noise sources and noise levels.

Regulatory Background

State of California

California encourages each local government to perform noise studies and implement a noise element as part of its general plan. The Office of Noise Control at the California Department of Health Services published guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. The concepts of these guidelines for land use compatibility are incorporated in the Noise and Safety Element of the Santa Rosa General Plan.

Interior noise levels for new multi-family residential units or dwellings are protected by Title 24 of the California Code of Regulations. Prior to construction, where the existing L_{dn} exceeds 60 dBA, these standards require performing site-specific acoustical studies. The acoustical studies are used to establish building design and insulation requirements that will reduce the exterior noise to a maximum interior noise level of 45 dBA L_{dn} . The U.S. Department of Housing and Urban Development (HUD) specifies an L_{dn} of 45 as its goal for interior noise in residential units built with HUD funding. Standard residential construction for single family units typically attenuates noise by 20 decibels.

TABLE 3.2.5-1
TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT AND INDUSTRY

At a Given Distance From Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Impression
	140		
	130		
Civil Defense Siren (100')	130		
Jet Takeoff (200')	120		Pain Threshold
	110	Rock Music Concert	
Pile Driver (50')	100		Very Loud
Ambulance Siren (100')			
	90	Boiler Room	
Freight Cars (50')	80	In Kitchen With Garbage Disposal Running	
Freeway (100')			
	70		Moderately Loud
Vacuum Cleaner (10')	60	Data Processing Center	
Department Store			
Light Traffic (100')	50	Private Business Office	
Large Transformer (200')			
	40		Quiet
Soft Whisper (5')	30	Quiet Bedroom	
	20	Recording Studio	
	10		Threshold of Hearing
	0		

Source: Arnold Peterson and Ervin Gross, 1963

City of Santa Rosa

The Noise and Safety Element of the Santa Rosa General Plan outlines the policies, programs, and guidelines the City will follow to control noise. The following goals and policies are outlined in the General Plan (Vision 2020).

- [GOAL – 1] Minimize noise

- POLICIES:

[N-1a] Reduce nuisance noise from stationary and moving sources in order to protect the health and comfort of people living, working and/or visiting in Santa Rosa by applying a comprehensive program of noise prevention.

[N-1b] Require an acoustical study, to be prepared by a qualified acoustical consultant for:

1. All proposed projects, except additions to existing housing units, that would be exposed to noise levels greater than stipulated by the Land Use Compatibility Standards (Included as Figure 3.2.5-1 of this SEIR); and
2. All proposed projects that would generate noise whose impacts on other uses would be greater than the levels stipulated by the Land Use Compatibility Standards in the appendix to this element. An adequate acoustical study should focus on how noise impacts can be reduced through site planning and review technical mitigation only after site planning alternatives to noise mitigation are exhausted.

[N-1c] Require mitigations, where necessary, to meet stipulated noise standards, including the reduction of $L_{dn}/CNEL$ to 45 in habitable rooms and to 60 $L_{dn}/CNEL$ in private and shared recreational facilities.

[N-1d] Prohibit existing uses to generate new noises exceeding the stipulated levels unless:
a) those noises are mitigated to acceptable levels; or b) the activities are specifically exempted by the City Council on the basis of community health, safety, and welfare.

[N-1e] Recognize the noise generating activities that are essential to community health, safety and welfare, such as emergency medical helicopter and vehicle operations, and allow reasonable latitude for the resolution of noise resulting from those activities.

[N-1f] Recognize that noise standards may sometimes be exceeded, especially in instances where homes front arterial roadways, and in mixed use areas, and that noise may be a trade-off for mitigation which could reduce quality of life and develop an undesirable visual pattern of soundwalls on arterial roadways.

[N-1g] Incorporate acoustical site planning into the design review process, including the incorporation of buffers and the orientation of primary living areas, windows and outdoor living areas away from unacceptable noise exposure.

[N-1h] Utilize buffers other than sound walls, where practicable, in order to avoid sterile streetscapes. Landscaped earth berms and setbacks are alternatives to walls. Berms can be used in conjunction with walls and, where walls are used, they can be made more attractive with well designed and maintained landscaping.

[N-1i] Encourage abatement of nonconforming industrial uses that create noise nuisances for nearby residential areas.

[N-1j] Cooperate with pertinent public agencies and private entities, to reduce noise from significant sources by:

- Requesting CALTRANS assign a high priority to traffic noise mitigation programs and to design and build sound walls that are as attractive as possible;
- Enforcement of the California Vehicle Code muffler regulations;
- Cooperation with Santa Rosa Memorial Hospital, Community Hospital and other hospitals proposing helipads to minimize the noise and safety impacts of medical emergency helicopters through location and design of landing pads, regulation of flight times and frequency and, if necessary, sound attenuating alterations to nearby residences;
- Disallowing development of new helipads as part of commercial, office, business park or industrial development for noise and safety reasons; and
- Working with private enterprises in order to reduce or eliminate noise nuisances from industrial and commercial sources.

The City of Santa Rosa also maintains a Noise Ordinance. The noise ordinance restricts sources that create loud, unnecessary, or unusual noise and disturb neighboring land uses. Amplified sound systems, machinery, equipment, vehicles, and leaf blowers are some of the sources specifically regulated by the ordinance.

Existing Noise Sources

Motor vehicle traffic is the most important noise source contributing to the existing noise environment. All of the Southwest Plan Area is exposed to traffic background noise from U.S. Highway 101, State Route 12 and other major arterials within Santa Rosa and Sonoma County. Highway 101, which is adjacent to the eastern boundary of the Southwest Plan Area, is the loudest noise source in the Plan Area. State Route 12, adjacent to the northern boundary of the Southwest Plan Area, is also a major source of noise. Along with traffic noise, low density rural residential areas south and west of the Southwest Plan Area could generate various farm equipment and animal noises. The Northwestern Pacific Railroad line is located in the eastern portion of the Southwest Plan Area. Railroad noise and noise from aircraft overflight contribute to existing noise conditions in the Southwest Plan Area but not substantially.

Land Use Compatibility Standards for Community Noise Environment

Land Use Category	Community Noise Exposure Ldn or CNEL, db					
	55	60	65	70	75	80
Residential						
Transient Lodging - Motel, Hotels						
Schools, Libraries, Churches, Hospitals, Nursing Homes						
Auditoriums, Concert Halls, Amphitheaters						
Sports Arena, Outdoor Spectator Sports						
Playgrounds, Neighborhood Parks						
Golf Courses, Riding Stables, Water Recreation, Cemeteries						
Office Buildings, Business Commercial and Professional						
Industrial, Manufacturing, Utilities, Agriculture						

 NORMALLY ACCEPTABLE

Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

 CONDITIONALLY ACCEPTABLE

New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.

 NORMALLY UNACCEPTABLE

New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

 CLEARLY UNACCEPTABLE

New construction or development clearly should not be undertaken.

Sources: State of California General Plan Guidelines, June 1987.

Existing Noise Levels

Existing noise levels for thirty roadway segments were estimated based on updated traffic data prepared for this SEIR. The existing noise levels were modeled through the use of the Federal Highway Administration's highway traffic noise model (FHWA-RD-77-108) which is implemented in the Caltrans SOUND32 model. The loudest existing noise levels are along U.S. 101 and State Route 12. Based on the modeled results with the updated traffic, the existing noise levels for these freeways are about 73 to 76 dBA L_{dn} at a distance of 100 feet from the road centerline, and L_{dn} levels within about 800 to 1,200 feet of the centerline are above 60 dBA. The most quiet streets in the Plan Area are Burbank Avenue and West Avenue, between Sebastopol and Hearn, Dutton Avenue between Hearn and Bellevue, and Moorland Avenue between Bellevue and Robles. For these streets, existing noise levels are less than 60 dBA L_{dn} within 100 feet of the centerline.

The existing conditions for all thirty roadway segments are shown in Table 3.2.5-2.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

The City of Santa Rosa, State, and federal noise ordinances, policies, and statutes were evaluated to produce the following standards of significance.

- Construction noise impacts to existing or planned residential and multi-residential areas would be considered significant if the anticipated noise levels would exceed the levels stated in the Noise Ordinance.
- Traffic noise impacts to existing residential, multi-residential, and school areas would be considered significant if the existing noise levels are over 60 dBA L_{dn} and a project would increase noise levels 1 dBA or more.
- Traffic noise impacts to existing playgrounds and neighborhood parks would be considered significant if the existing noise levels are over 70 dBA L_{dn} and a project would increase noise levels by 1 dBA or more.
- Traffic noise impacts to existing office buildings and commercial areas would be considered significant if the existing noise levels are over 65 dBA L_{dn} and a project would increase noise levels by 1 dBA or more.

TABLE 3.2.5-2
SUMMARY OF EXISTING NOISE LEVELS (L_{DN})

Location	L_{dn} at 100 ft (dBA)	Distance to 70 dBA Contour (ft)	Distance to 65 dBA Contour (ft)	Distance to 60 dBA Contour (ft)
Road Segment/Between Cross-streets				
1 Sebastopol/Wright & Corp Ctr Pky	62	30.0	65.0	140.0
2 Sebastopol/Corp Ctr Pky & Lombardi	64	39.0	85.0	180.0
3 Sebastopol/Lombardi & Stony Point	66	51.0	111.0	240.0
4 Sebastopol/Stony Point & Burbank	64	41.0	88.0	190.0
5 Sebastopol/Burbank & West	64	40.0	87.0	190.0
6 Sebastopol/West & Dutton	65	44.0	94.0	200.0
7 Sebastopol/East of Dutton	62	31.0	66.0	140.0
8 Northpoint/Corp Ctr & Stony Point	62	29.0	62.0	130.0
9 Hearn/Stony Point & S Dutton	62	31.0	66.0	140.0
10 Hearn/S Dutton & Dutton	64	40.0	87.0	190.0
11 Hearn/Dutton & Dowd	64	38.0	82.0	180.0
12 Hearn/Dowd & Corby	65	44.0	94.0	200.0
13 Corp Ctr Pky/Sebastopol & North Point	62	29.0	63.0	140.0
14 Stony Point/SR12 & Sebastopol	68	73.0	156.0	340.0
15 Stony Point/Sebastopol & North Point	66	52.0	113.0	240.0
16 Stony Point/Northpoint & Hearn	66	55.0	119.0	260.0
17 Stony Point/Hearn & Bellevue	66	54.0	116.0	250.0
18 Burbank/Sebastopol & Hearn	53	7.0	16.0	30.0
19 West/Sebastopol & Hearn	58	16.0	35.0	70.0
20 Dutton/SR12 & Sebastopol	66	55.0	118.0	250.0
21 Dutton/Sebastopol & Barham	63	36.0	77.0	170.0
22 Dutton/Barham & Hearn	62	28.0	59.0	130.0
23 Dutton/Hearn & Bellevue	58	15.0	32.0	70.0
24 Mooreland/Bellevue & Robles	59	19.0	40.0	90.0
25 SR12/Stony Point & Dutton	73	157.0	338.0	730.0
26 SR12/Dutton & US101	74	182.0	392.0	840.0
27 US101/SR12 & Corby	76	265.0	572.0	1,230.0
28 US101/Corby & Hearn	76	260.0	559.0	1,210.0
29 US101/Hearn & Bellevue	76	260.0	561.0	1,210.0
30 US101/Bellevue & Todd	76	260.0	561.0	1,210.0

Notes: Noise contours are projected assuming flat and unobstructed terrain between the road and the noise receiver. Intervening structures, vegetation, and terrain would help to attenuate noise levels and reduce the levels and distances shown in this table.

Source: EIP Associates, 2000.

- Location of proposed residential, multi-residential, and school land uses in an area where existing noise levels are over 60 dBA L_{dn} would be considered a significant impact.
- Location of proposed playgrounds and neighborhood parks in an area where existing noise levels are over 70 dBA L_{dn} would be considered a significant impact.
- Location of proposed office buildings and business commercial land uses in an area where existing noise levels are over 65 dBA L_{dn} would be considered a significant impact.

As noted previously, (refer to the Introduction section of this SEIR), impacts in this SEIR are projected to the year 2010 consistent with the buildout assumptions contained in the Southwest Area Plan.

Development Assistance Program

The Development Assistance Program basically provides redevelopment financing for land acquisition, deteriorated structure removal, site preparation, relocation assistance, hazardous materials remediation and the removal of concrete runways at the Air Center. Redevelopment financing assistance for these activities could generate community noise through subsequent activities of deteriorated structure removal, site preparation and the removal of Air Center concrete runways within Redevelopment Subareas A and B. Also, potential secondary noise impacts would result from the construction of privately sponsored residential, commercial and mixed-use projects.

Impact 3.2.5-1

New construction as assisted through the Redevelopment Plan Development Assistance Program would cause temporary increases in construction noise levels. This is considered to be short-term significant impact. (S)

Although this would be a secondary impact resulting from the Redevelopment Plan project, construction activities would temporarily increase noise levels in and around the Plan Area over the entire period of construction due to earthmoving, utility and general construction activities, and removal of the concrete runways at the Air Center. These activities have a potential for disturbing residents, school children, and businesses. Earthmoving, materials handling, stationary, and impact equipment and vehicles generate noise during clearing, demolition, excavation, grading, roadway and local utility construction operations associated with the proposed privately sponsored projects.

Actual noise levels experienced by local residents would be generated by different types of construction equipment. Since at this time, the number, type, and location of equipment to be used during project construction is not known, it is not possible to accurately predict the noise level for residents, school children, or businesses. Temporary noise levels from a generic

construction area with four pieces of equipment operating were analyzed in the 1994 Southwest Area Plan EIR.⁷ Calculated worst-case temporary noise levels could be expected to be 90 dBA for receptors 10 feet the construction area, 86 dBA for receptors 50 feet from the construction area, 83 dBA for receptors 100 feet from the construction area, and 72 dBA for receptors 500 feet from the construction area. The analysis assumed that there is direct line-of-sight between the noise sources and the exterior receptor. Noise levels for receptors inside buildings with the windows closed would be 15 to 20 dBA less. Implementation of the following mitigation measures would reduce this impact to an insignificant level.

Mitigation Measure 3.2.5-1

Implementing the following measures would reduce construction-related noise impacts to an insignificant level. (I)

- (a) To minimize construction noise impacts on residents, limit construction hours to between 7:00 a.m. and 7:00 p.m. on weekdays and between 9:00 a.m. and 6:00 p.m. on weekends for projects within 1,600 feet of inhabited dwelling unit(s). Any work outside of these hours shall require a special permit from the City of Santa Rosa. There should be compelling reasons for permitting construction outside of the designated hours.
- (b) Construction equipment shall be properly outfitted and maintained with noise reduction devices to minimize construction-generated noise.
- (c) The contractor shall locate stationary noise sources away from residents and developed areas, and require use of acoustic shielding with such equipment when feasible and appropriate.

Mitigates:	Impact 3.2.5-1 (I)
Implementation:	Include in construction specifications prior to approval of final project plans and issuance of building permits. Provide periodic inspections during the construction period.
Responsibility:	Individual project sponsors.
Monitoring:	Santa Rosa Department of Community Development

With mitigation, calculated worst-case temporary noise levels of 79 dBA could be expected for receptors 10 feet from the construction area, of 75 dBA for receptors 50 feet from the construction area, of 72 dBA for receptors 100 feet from the construction area, and of 61 dBA for receptors 500 feet from the construction area.

Impact 3.2.5-2

The increase in traffic resulting from new construction as assisted through the Redevelopment Plan Development Assistance Program, in conjunction with cumulative traffic, would result in traffic noise impacts on proposed Southwest Plan Area developments. This is considered a significant impact. (S)

The Southwest Area Plan residents at buildout would be exposed to exterior noise levels greater than 60 dBA L_{dn} . Forty-seven road segments were evaluated for future noise levels with traffic data updated for this SEIR. Noise levels would increase above existing conditions on the following road segments:

- Sebastopol Road between Wright Road and Corporate Center Parkway,
- Sebastopol Road east of Stony Point Road,
- Northpoint Parkway,
- Hearn Road east of Dutton Avenue,
- Stony Point Road from State Route 12 to Bellevue Road,
- portions of Dutton Avenue, and
- Burbank Avenue.

Noise levels would *decrease* below existing levels on the following road segments:

- a portion of Sebastopol Road between Corporate Center Parkway and Stony Point Road,
- Hearn Avenue (between Stony Point Road and Dutton Avenue),
- Dutton Avenue (between Sebastopol Road and Hearn Avenue),
- Corporate Center Parkway (between Sebastopol Road and Northpoint Parkway),
- West Avenue, and
- Mooreland Avenue.

Only Dutton Avenue (from Hearn Avenue to Bellevue), West Avenue, and Mooreland Avenue would produce traffic noise levels less than 60 dBA L_{dn} within 100 feet of the road centerline. All of the other roads evaluated in this analysis would create noise levels above 60 dBA L_{dn} within 100 feet.

Table 3.2.5-3 presents the L_{dn} at 100 feet from the centerline of forty-seven roadways for the year 2010 within the Plan Area, and the distances from the centerline to the 60, 65, and 70 L_{dn}

contours. For example, Area Plan residents with unobstructed views within 1,200 to 1,300 feet from the centerline of U.S. 101 would be exposed to noise levels of 60 dBA L_{dn} . Area Plan residents within 700 to 730 feet from the centerline of State Route 12 would be exposed to noise levels of 60 dBA L_{dn} . Area Plan residents within 120 to 270 feet from the centerline of Hearn Avenue would be exposed to noise levels equal to 60 dBA L_{dn} . These findings are consistent with the findings made for existing residences in the Hearn Avenue EIR.⁸ Area Plan residents within 70 to 260 feet from the Dutton Avenue centerline (depending on which portion of the road the residents would be located) would be exposed to noise levels over 60 dBA L_{dn} . Implementation of the following mitigation measure would reduce these exterior and interior noise level impacts to an insignificant level.

Mitigation Measure 3.2.5-2

Project developers shall propose noise mitigation consistent with General Plan Noise and Area Plan Community Design Policies to reduce year 2010 exterior noise levels on proposed residential and school land uses to 60 dBA L_{dn} or below, on proposed playgrounds and neighborhood park land uses to 70 dBA L_{dn} or below, and on proposed office buildings and commercial areas to 65 dBA L_{dn} or below. (I)

Mitigates:	Impact 3.2.5-2 (I)
Implementation:	Include in construction plans and specifications prior to approval of final project plans and issuance of building permits.
Responsibility:	Individual project sponsors.
Monitoring:	Santa Rosa Department of Community Development

Setback distances from the roadway centerline to the 60, 65, and 70 L_{dn} contours are provided in Table 3.2.5-3. Setback distances assume that no noise attenuation is caused by intervening buildings, vegetation, or terrain. The terrain is assumed to be flat, soft and non-reflective with no obstructions. These assumptions result in a decibel reduction of 4.5 dBA per doubling of distance. Reducing exterior noise level to 60 dBA L_{dn} or below would reduce interior noise levels to 45 L_{dn} or below since standard construction methods usually provide between 15 and 20 dBA of attenuation. Not all areas within residential, multi-residential, school, playgrounds, neighborhood parks, office buildings, and business commercial areas are considered sensitive to

TABLE 3.2.5-3
SUMMARY OF PLAN YEAR 2010 NOISE LEVELS (L_{DN})

Location Road Segment/Between Cross-streets	L_{dn} at 100 ft (dBA)	Distance to 70 dBA Contour (ft)	Distance to 65 dBA Contour (ft)	Distance to 60 dBA Contour (ft)
1 Sebastopol/Wright & Corp Ctr Pky	64	42.0	90.0	190.0
2 Sebastopol/Corp Ctr Pky & Lombardi	63	35.0	74.0	160.0
3 Sebastopol/Lombardi & Stony Point	64	37.0	80.0	170.0
4 Sebastopol/Stony Point & Burbank	66	56.0	121.0	260.0
5 Sebastopol/Burbank & West	66	54.0	117.0	250.0
6 Sebastopol/West & Dutton	66	55.0	118.0	250.0
7 Sebastopol/East of Dutton	64	39.0	84.0	180.0
8 Northpoint/Corp Ctr & Stony Point	66	52.0	111.0	240.0
9 Hearn/Stony Point & S Dutton	61	26.0	56.0	120.0
10 Hearn/S Dutton & Dutton	63	36.0	77.0	160.0
11 Hearn/Dutton & Dowd	66	51.0	111.0	240.0
12 Hearn/Dowd & Corby	67	59.0	127.0	270.0
13 Corp Ctr Pky/Sebastopol & North Point	61	25.0	53.0	110.0
14 Stony Point/SR12 & Sebastopol	68	75.0	162.0	350.0
15 Stony Point/Sebastopol & North Point	67	60.0	130.0	280.0
16 Stony Point/Northpoint & Hearn	66	58.0	125.0	270.0
17 Stony Point/Hearn & Bellevue	67	63.0	136.0	290.0
18 Burbank/Sebastopol & Hearn	61	24.0	53.0	110.0
19 West/Sebastopol & Hearn	54	9.0	18.0	40.0
20 Dutton/SR12 & Sebastopol	66	55.0	119.0	260.0
21 Dutton/Sebastopol & Barham	63	36.0	77.0	160.0
22 Dutton/Barham & Hearn	61	26.0	57.0	120.0
23 Dutton/Hearn & Bellevue	58	16.0	34.0	70.0
24 Mooreland/Bellevue & Robles	57	13.0	29.0	60.0
25 SR12/Stony Point & Dutton	73	150.0	324.0	700.0
26 SR12/Dutton & US101	73	158.0	340.0	730.0
27 US101/SR12 & Corby	76	256.0	551.0	1,190.0
28 US101/Corby & Hearn	76	268.0	577.0	1,240.0
29 US101/Hearn & Bellevue	77	279.0	600.0	1,290.0
30 US101/Bellevue & Todd	77	282.0	607.0	1,310.0
31 North Point/Wright & Fresno	62	30.0	65.0	140.0
32 North Point/Fresno & Corp Ctr Pkwy	65	46.0	98.0	210.0
33 North Point/Stony Point & Hearn	65	48.0	103.0	220.0
34 North Point/Hearn & Dutton	65	45.0	98.0	210.0
35 Dutton/North Point & Bellevue	60	22.0	46.0	100.0
36 Ludwig/Fresno & Stony Point	65	47.0	102.0	220.0
37 Bellevue/Stony Point & Primrose	65	48.0	104.0	220.0
38 Bellevue/Primrose & Dutton	66	51.0	110.0	240.0
39 Fresno/Finley & North Point	65	48.0	103.0	220.0
40 Fresno/North Point & Ludwig	61	25.0	54.0	120.0
41 Dutton/Hearn & North Point	65	45.0	98.0	210.0
42 Fresno/Sebastopol & Finley	61	25.0	53.0	110.0
43 Wright/Sebastopol & North Point	65	46.0	100.0	210.0
44 Wright/Northpoint & Ludwig	63	34.0	73.0	160.0
45 Ludwig/Wright & Fresno	62	29.0	62.0	130.0
46 Stony Point/Bellevue & Todd	66	52.0	113.0	240.0
47 Bellevue/Mooreland & Santa Rosa	69	80.0	172.0	370.0

Notes: Noise contours are projected assuming flat and unobstructed terrain between the road and the noise receiver. Intervening structures, vegetation, and terrain would help to attenuate noise levels and reduce the levels and distances shown in this table.

Source: EIP Associates, 2000.

significant noise levels. For example, parking lots, driveways, and public sidewalks are not considered sensitive areas. Due to the planning level of this document, specifics necessary for determining sound wall and/or berm heights and locations necessary for reducing noise levels behind sound walls and/or berms cannot be calculated. Table 3.2.5-3 is provided as a guide for use in future project planning and locating buildings to avoid noise impacts associated with Area Plan buildout.

Impact 3.2.5-3

The increase in traffic resulting from new construction as assisted through the Redevelopment Plan Development Assistance Program, in conjunction with cumulative increased traffic, would result in traffic noise impacts on existing Plan Area land uses. This is considered a significant impact. (S)

As discussed in the Setting, many Southwest Plan Area streets have existing noise levels above 60 dBA L_{dn} within 100 feet of the road centerline, and existing Southwest Area Plan residents are exposed to exterior noise levels greater than 60 dBA L_{dn} . Some of these residents could be exposed to noise level increases of 1 dBA or more, and additional existing residents could be exposed to noise levels above 60 dBA L_{dn} as traffic on Southwest Plan Area streets grows. Traffic noise from all but three of the evaluated roadway segments in the year 2010 would produce noise levels at or above 60 dBA L_{dn} at 100 feet from the road centerline. Only Dutton Avenue (from Hearn Avenue to Bellevue), West Avenue, and Mooreland Avenue would produce traffic noise levels less than 60 dBA L_{dn} within 100 feet.

There are probably over two-hundred residential dwellings, many businesses, several commercial areas, schools and parks adjacent or near planned new or improved roadways. Given the absence of plan details and precise right-of-way locations for new roads and road widening projects, the full extent of the impact of future noise on existing land uses cannot be accurately determined. However, use of Table 3.2.5-3 would provide the necessary noise level data once rights-of-way are determined. Mitigation includes the following:

Mitigation Measure 3.2.5-3

The following measures shall be implemented where feasible to reduce Southwest Plan Area impacts to existing residences to an insignificant level. (I)

- Retrofit existing residential land uses with acoustical attenuation materials, or relocate residences, to reduce interior noise levels for the year 2010 to below 45 L_{dn} .
- Construct sound walls with moveable sound attenuating gates, or berms to reduce exterior noise levels of existing residential land uses for the year 2010 to 60 L_{dn} or below.
- Construct soundwalls or berms at playgrounds and neighborhood parks to reduce noise levels for the year 2010 to 70 L_{dn} or below.
- Construct soundwalls or berms at office buildings and commercial areas to reduce noise levels for the year 2010 to 65 L_{dn} or below.

Mitigates:	Impact 3.2.5-3 (I)
Implementation:	Include in construction specifications prior to approval of final project plans and issuance of building permits.
Responsibility:	Individual project sponsors.
Monitoring:	Santa Rosa Department of Public Works in conjunction with the Department of Community Development, Planning and building Division.

Implementing the above mitigation measures would reduce interior noise levels to a level of insignificance. However, given that the above mitigation measures would require construction expenditures, the likelihood of all existing properties impacted by future noise receiving the necessary mitigation is considered remote. Therefore, where the above measures would be needed to mitigate a significant impact, but are not feasible, Impact 3.2.5-3 would be significant and unavoidable.

Impact 3.2.5-4

Future transit use along the Northwestern Pacific Railroad Corridor within the Southwest Plan Area could affect ambient noise levels at proposed project sites. This is considered to be a potentially significant impact. (PS)

In the future, as an indirect result of the Redevelopment Plan, the NWPRR railroad corridor could be used by transit vehicles, with the possibility of evening and nighttime operations. Although, at this time there is no heavy railroad use on the tracks and no immediate plans for the railroad

corridor for transit and/or commuter use, there is the potential for significant noise impacts to future residential and commercial uses adjacent to the corridor. Because there is no specific plan for the railroad corridor at this time it is not possible to predict noise levels for the adjacent land uses. However, according to a noise screening procedure recommended by the Federal Transit Administration, a noise assessment should be prepared if noise-sensitive land uses have an unobstructed line-of-sight within 750 feet of a commuter rail mainline or within 375 feet with intervening buildings.⁹ Noise levels from twenty trains per day were estimated in the 1994 Southwest Area Plan EIR.¹⁰ The 60 dBA L_{dn} contour could be approximately 300 feet from the tracks, and the 65 dBA L_{dn} contour could be approximately 150 feet from the tracks. This is considered to be a potentially significant impact.

Mitigation Measure 3.2.5-4

Implement Mitigation Measure 3.2.5-2. (I)

Public Projects Program

The infrastructure projects associated with the Public Projects Program would not result in the erection or operation of new noise sources. However, construction-related noise impacts that would be caused by the Public Projects Program would be as discussed under Impact and Mitigation Measure 3.2.5-1. Noise impacts associated with changes to traffic patterns caused by implementation of the Public Projects Program would be as discussed under Impact and Mitigation Measures 3.2.5-2 and 3.2.5-3. Because the infrastructure improvements would not cause noise impacts that have not already been considered, the discussion of noise impacts and mitigation measures under the Development Assistance Program would apply equally to the Public Projects Program.

Housing Program

The Housing Program provides assistance to build, improve and preserve low and moderate income housing. Redevelopment subsidies for these activities would not directly generate noise impacts. However, the Housing Program could generate secondary noise impacts through the stimulation of development and housing construction activities, and/or the removal of impediments to development and housing construction activities within Redevelopment Subareas A or B, or the Southwest Plan Area as a whole. This would result from the various private and public projects

as described in the Southwest Area Plan and Southwest Area Plan EIR. Therefore, the discussion of noise impacts and mitigation measures under the Development Assistance Program would apply equally to the Housing Program.

Notes - Noise

1. A decibel is the standard unit of sound amplitude, or loudness; decibels are measured on a logarithmic scale, similar to the scale used to measure earthquake intensity. A logarithmic scale is a non-linear scale; for decibels, each increase in 10 dB multiplies the previous value by 10. For example, 50 dBA is 10 times louder than 40 dBA, while 60 dBA is 100 times louder than 40 dBA.
2. L_{eq} , the equivalent steady-state sound level, is the average acoustic energy content of noise for a stated period of time. The L_{eq} of two different time-varying noise events are the same if the events deliver the same acoustic energy to the ear during exposure, no matter what time of the day or night they occur, unlike some other measurements that adjust for differences in noise sensitivity at night.
3. L_{dn} is a day-night average noise level, a 24-hour average L_{eq} ; it takes into account the greater sensitivity of persons to nighttime noise and adds 10 dBA to noise levels if they occur during the hours of 10:00 p.m. to 7:00 a.m.
4. CNEL is a community noise equivalent level 24-hour average noise similar to L_{dn} but with an additional 5 dBA added during the hours of 7:00 p.m. to 10:00 p.m. to account for sensitivity to nighttime noise.
5. Minnesota Pollution Control Agency, *An Introduction to Sound Basics*, May 1983.
6. Federal Transit Administration, Transit Noise and Vibration Impact Assessment, DOT-T-95-16, April 1995, Table 6-10. Shielding provided by a row of buildings provided the gaps in the row of buildings is less than 1/3 of the length of the row.
7. Southwest Area Plan Final EIR, March 1994, pp. 3.2.5-14.
8. The Hearn Avenue EIR identified 57 homes having year 2010 noise levels above 60 dBA. One home with a relatively large setback of about 150 feet was found to have year 2010 noise levels below 60 dBA Ldn. City of Santa Rosa, Hearn Avenue Reconstruction and Improvement Project Draft EIR, p. 3-110, May 1995.
9. Federal Transit Administration, Transit Noise and Vibration Impact Assessment, DOT-T-95-16, April 1995, Table 4-1, Screening Distances for Noise Assessments.
10. Southwest Area Plan Final EIR, March 1994, pp. 3.2.5-20.

1. The first part of the document is a letter from the President of the United States to the Congress, dated January 1, 1801.

2. The second part is a report from the Secretary of the Treasury, dated January 1, 1801.

3. The third part is a report from the Secretary of the Navy, dated January 1, 1801.

4. The fourth part is a report from the Secretary of the War, dated January 1, 1801.

5. The fifth part is a report from the Secretary of the Interior, dated January 1, 1801.

6. The sixth part is a report from the Secretary of the State, dated January 1, 1801.

7. The seventh part is a report from the Secretary of the War, dated January 1, 1801.

8. The eighth part is a report from the Secretary of the Navy, dated January 1, 1801.

9. The ninth part is a report from the Secretary of the Treasury, dated January 1, 1801.

10. The tenth part is a report from the Secretary of the State, dated January 1, 1801.

11. The eleventh part is a report from the Secretary of the War, dated January 1, 1801.

12. The twelfth part is a report from the Secretary of the Navy, dated January 1, 1801.

13. The thirteenth part is a report from the Secretary of the Treasury, dated January 1, 1801.

4. GROWTH INDUCEMENT

Section 15126.2(d) of the *CEQA Guidelines* requires the following review of growth inducement in an EIR:

Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also, discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.¹

In summary, CEQA requires a discussion of how a project could increase population, employment, or housing growth in surrounding areas and the impacts resulting from this growth. CEQA Guidelines indicate that a project would normally have a significant effect on the environment if it would induce substantial growth or concentration of population. This section of the SEIR discusses the manner in which the proposed Redevelopment Plan project could affect such growth.

There are two basic types of population, housing, employment, and business growth: direct and indirect. Direct growth occurs on the project site and within the facilities it constructs. Indirect growth occurs beyond the project site but is stimulated by the proposed project's direct growth. Such growth is directly tied to increased direct and indirect investment and spending of employees, businesses, and residents. When CEQA refers to *induced growth*, CEQA means *all growth -- direct, indirect, or otherwise*.

The proposed Redevelopment Plan project is not a major industrial, commercial or residential project. It is not a project to be constructed. The Redevelopment Plan project, through the Development Assistance Program, Public Projects Program, and the Housing Program, is a financing mechanism intended by the Redevelopment Agency to act as a catalyst to spur the private sector and area residents and businesses to further assist in the revitalization of the Southwest Plan Area. This revitalization, in turn, would remove impediments to new development as envisioned in the Southwest Area Plan.

As noted previously (see Section 2, *Project Description*), the primary purpose of the Southwest Area Plan as adopted by the Santa Rosa City Council, is to implement the City's General Plan. During preparation of the General Plan, it became clear that the land use diagram for the Southwest Area was broad and conceptual in nature, and it was determined that an Area Plan would be necessary to respond to the uniqueness of the Southwest Area. The Redevelopment Plan would therefore assist in implementing the Southwest Area Plan.

As explained in the technical sections of this SEIR (i.e., *Public Services, Air Quality*), redevelopment financing through the Development Assistance Program would not directly impact the environment within Redevelopment Subareas A or B, but could generate impacts to the environment through the stimulation of development and/or the removal of obstacles to development within Redevelopment Subareas A or B, or the Southwest Plan Area as a whole. The same would be true for financing of the Public Projects and Housing Programs. It is the actual construction and operation of the projects that would generate the physical environmental impacts.

Therefore, implementing the Southwest Area Plan, as assisted through the Redevelopment Plan project, would contribute to growth by creating new residential and commercial space in the Southwest Plan Area. However, as noted above, preparation of the Area Plan was required under the provisions of the Santa Rosa General Plan, and is thus considered growth accommodating

The Southwest Area Plan sets in place goals, objectives and policies that will help to define and direct future growth in the Southwest Area. The Southwest Area Plan also provides land use

designations and development densities for all lands which are currently vacant or underutilized. As such, the Southwest Plan is intended to guide and accommodate residential, commercial and industrial growth and population increases. At buildout, the Southwest Plan Area would support about 19,400 jobs and create about 9,550 dwelling units which would support 24,200 new residents.² This growth would then create two types of secondary growth: The first type of secondary growth would consist of new households formed by the new employees working in new businesses. These new households could choose residential locations within the Southwest Plan Area. Overall population growth resulting from the Southwest Area Plan at buildout would amount to about 58 percent of the projected population growth in Santa Rosa by the year 2010, and 16 percent of total Sonoma County growth by the year 2010 (assumes Plan Area buildout by 2010).

Secondary growth would have the potential for environmental impacts, but would not automatically create environmental impacts in and of itself. This potential is realized to the extent that new development in the greater Santa Rosa area would be consistent with the provisions of the General Plan and the Southwest Area Plan itself, within the City's Urban Boundary. If that happens, then it can be assumed that the secondary households' demand for a residential location was fulfilled by the addition of housing stock consistent with the General Plan and the City's State mandated housing goals, to provide its assigned fair share of regional housing needs and meet its housing affordability goals.

The second type of secondary growth stems from the "induced" employment generated by the economic activity occurring in the commercial space developed by a proposed project. Secondary employment is generated by a direct increase in economic activity. It is due to the increases in spending that would occur on the part of the businesses, employees, and employee households related to the direct economic activity of the projects. It is also due to the additional spending that would occur on the part of suppliers of the goods and services demanded by the projects' direct economic activity (businesses, employees and primary and secondary households), plus the additional spending on the part of the suppliers' additional employees and related households. Production, employment, and households would increase with each new round of spending, but at a decreasing rate with each additional round.

Special note should be made with respect to the infrastructure projects planned for the Southwest Plan Area, the implementation of which would be assisted through the Public Projects Program under the Redevelopment Plan. Growth in a given area may be induced by removing infrastructural barriers to growth through the provision of new infrastructure and/or improving transportation and circulation systems. The growth-inducing potential of the infrastructure projects within the Southwest Plan Area would be significant if the Southwest Area Plan created the capacity to accommodate growth above and beyond what was permitted under the Southwest Area Plan. Infrastructure projects of road widenings, new roads, expanded sewer, water and drainage systems are being designed to serve the Southwest Plan Area itself. Correspondingly, any future development outside the current Urban Boundary resulting from any development proposal to modify the Urban Boundary, would be expected to require adjustments and/or improvements to sewer, road and water projects currently planned for the Southwest Plan Area. With the development of infrastructure as established within the Southwest Area Plan, significant growth in the semi-rural area outside the Urban Boundary is not anticipated.

Implementation of the Southwest Area Plan, as assisted through the Redevelopment Plan, would advance the policies of the City to promote and facilitate City centered growth which would minimize the cost and extent of providing infrastructure services by producing a more compact and efficient pattern of development. This in turn would limit the potential for urban sprawl by focusing growth in an urban area and help to slow the rate at which agricultural lands, open space and areas of habitat value outside the Urban Boundary may be converted to urban development.

Parcels that have been without public water and sewer service in the Southwest Plan Area would have direct access to expanded sewer and water services planned to serve new development, as assisted through the Redevelopment Plan. The resulting new residential and commercial development of the proposed projects would bring in a new resident population (to the extent existing Santa Rosa residents would not relocate to the Southwest Area), and more employment opportunities, as well as increased business sales.

Growth can only happen through capital investment in new economic opportunities by the private or public sectors (predominantly the former). Development pressures are created by the desires of investors to mobilize their resources in a particular region or locality. These pressures help to structure the local politics of growth and the local jurisdiction's posture on growth management and land use policy. The growth-inducing potential or pressure created by a project is therefore mediated by the locality itself.

In sum, regional growth resulting from development within the Southwest Plan Area as assisted through the Redevelopment Plan would be secondary in nature. The development of currently vacant or underutilized land, as is the case in much of the Southwest Plan Area, normally has secondary growth-inducing impacts in terms of intensified land use, increased job opportunities as noted above, increased municipal tax revenues and greater demands (impacts) on transportation, circulation and public service facilities, including sewer and water supply.

Project construction would generate jobs in the construction, materials fabrication and supply industries up until the time of construction completion. The provision of construction jobs in the Southwest Plan Area would create secondary (i.e., incremental) demand for local goods and services. Cumulative development, inclusive of the construction of other projects in Santa Rosa outside the Southwest Area Plan area would magnify the need for materials and services relating to the construction industry during the construction period, assuming the construction periods of such projects would overlap.

Construction of the projects anticipated in the Southwest Area Plan, including infrastructure projects, would directly increase construction employment. Given the relatively standard nature of the construction projects, it would be expected that demand would be met within the existing and future construction labor market in Sonoma and Marin Counties, and neither a substantial quantity of specialized labor nor construction workers from outside the northern Bay Area counties would be induced to temporarily relocate or commute long distances. As with all economic activity, some of the demand for products and services would be met from firms outside of the local economy

Future housing from the proposed projects in the Southwest Plan Area, inclusive of Redevelopment subareas A and B, can be considered growth accommodating in that it would partially meet the projected need for housing in Santa Rosa. As noted previously (see Section 2, *Project Description*), the proposed projects would be one component of the Southwest Area Plan. The Southwest Area, as adopted by the City Council, is projected for development.

In conclusion, growth and the rate of growth shapes both the physical and social structure of communities. As indicated above, the Southwest Area Plan and its developmental components as assisted through the Redevelopment Plan project, would facilitate and contribute to growth within Santa Rosa. While there would be a contribution to growth, it would be City centered growth within the context of an adopted plan (the Southwest Area Plan) to accommodate growth, and would not generate significant growth inducing impacts.³

Notes - Growth Inducement

1. California Office of Planning and Research, *CEQA – California Environmental Quality Act -- Statutes and Guidelines*, as amended October 26, 1998.
2. As calculated in the Southwest Area Plan Final EIR, March, 1994.
3. For further information regarding community service facilities, refer to Section 3.1.4, *Public Services*, and Section 3.1.5 *Utilities*, of this SEIR.

5. UNAVOIDABLE SIGNIFICANT ADVERSE IMPACTS

In accordance with Section 15126.2(b) of the California Environmental Quality Act (CEQA) Guidelines, this section sets forth those significant environmental impacts which cannot be mitigated to a level of insignificance that would result from the Southwest Santa Rosa Redevelopment Plan project.

CEQA requires the decision-maker (Lead Agency), to balance the benefits of a proposed project against its unavoidable environmental risks in determining whether to approve a project. Where a decision on a project allows the occurrence of significant effects that are identified in an EIR but are not at least substantially mitigated, the Lead Agency is to state in writing through a Statement of Overriding Considerations the specific reasons to support its action based on the EIR and/or other information in the record. If a Lead Agency makes a Statement of Overriding Considerations, the Statement should be included in the record of the project approval.¹

Unavoidable significant adverse impacts have been identified for the following two subject areas: *Traffic and Circulation*, and *Visual Quality and Community Character*.

TRAFFIC AND CIRCULATION

- The Redevelopment Plan project, along with cumulative traffic growth, would have a significant impact (LOS "E" or worse) on U.S. Highway 101 from Wilfred Avenue to Highway 12. The LOS is projected at "F" in this area. Average travel speeds would be in the 9-25 MPH range during the PM peak hour. This is based primarily on cumulative traffic growth, and the assumption that new freeway mainline lanes would be reserved for buses and carpools.

VISUAL QUALITY AND COMMUNITY CHARACTER

- Buildout as envisioned in the Southwest Area Plan and as assisted through the Redevelopment Plan would result in the conversion of undeveloped land parcels that are currently vacant to an urban condition. This development would constitute a significant change in visual conditions within central to south and west portions of the Southwest Plan

Area, and visually contrast with remaining undeveloped lands to the west and south outside of the Southwest Plan Area.

- Construction of the Fulton/Wright Road overcrossing and interchange at State Highway 12 would be seen as increased urbanization in an area that currently appears semi-rural in character. The transition from semi-rural to urban conditions to the eastbound Highway 12 motorist would be sudden and abrupt.

BIOLOGICAL RESOURCES

- Development within the Southwest Plan Area as assisted through the Redevelopment Plan, will result in the loss of grassland foraging area for sensitive bird species known to occur within the Southwest Plan Area.

NOISE

- The increase in traffic resulting from new construction as assisted through the Redevelopment Plan, in conjunction with cumulative increased traffic, would result in traffic noise impacts on existing Plan Area land uses. Given that noise mitigation measures would require construction expenditures for existing land uses, the likelihood of all existing properties impacted by future noise receiving the necessary mitigation is considered remote.

Notes - Unavoidable Significant Adverse Impacts

1. 14 California Code of Regulations Section 15000, *et seq.*

6. ALTERNATIVES TO THE PROPOSED PROJECT

The analysis of alternatives is an important element of an EIR and is necessary to assure that the full range of options is examined, thus providing a complete understanding of the effects of full project implementation, partial project implementation, or no project. This section of the SEIR describes alternatives to the proposed Redevelopment Plan project that have been considered by the preparers of the SEIR. This section also discusses the No-Project Alternative as required under CEQA.

The purpose of the discussion of alternatives in an EIR is to focus on alternatives which are capable of avoiding or substantially lessening any significant environmental effects of a project, even if these alternatives would impede to some degree the attainment of the project objectives or would be more costly¹ (see Section 2, *Project Description* for a discussion of project objectives). The range of alternatives is to include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects.² Among the factors that may be taken into account when addressing the feasibility of alternatives for inclusion in an EIR are site suitability, economic viability, availability of infrastructure, general plan consistency, or other plans or regulatory limitations, including jurisdictional boundaries.³

CEQA Guidelines require that an EIR should briefly describe the rationale for selecting the alternatives to be discussed and should identify any alternatives that were considered but rejected as infeasible during the scoping process and briefly explain the reasons underlying that determination.⁴ The EIR should include sufficient information about each alternative to allow a meaningful evaluation, analysis and comparison with the project as proposed. Any project approvals could be conditioned on the findings of the alternatives analysis.

This alternatives analysis focuses on the proposed Redevelopment Plan project. This analysis does not focus on alternatives to the Southwest Area Plan. Southwest Area Plan alternatives were

evaluated in the 1994 Southwest Area Plan EIR and focused on reduced development, increased development density, alternative Southwest Area Plan schemes and alternative circulation plans.

The spectrum of alternatives presented in this SEIR indicates which options for the proposed Redevelopment Plan project, if any, might feasibly attain some of the Redevelopment Plan project objectives, given the economic and social context of the Redevelopment Plan proposal, while reducing one or more significant impacts. No alternatives to the Redevelopment Plan project have been established by the Redevelopment Agency.

As noted in Section 5 of this EIR, *Unavoidable Significant Adverse Impacts*, the significant impacts of Southwest Plan Area buildout as assisted through the Redevelopment Plan which cannot be mitigated to levels of insignificance include 1) increased traffic congestion (E and F service levels) on U.S. 101 during the PM peak hour (includes cumulative development outside the Southwest Plan Area), 2) significant changes in visual conditions within the Southwest Plan Area, and visual contrast with lands outside the Southwest Plan Area, 3) the loss of grassland foraging area for wildlife, 4) and increased traffic noise impacting existing land uses within the Southwest Plan Area.

Other significant impacts resulting from Southwest Area Plan buildout as assisted through the Redevelopment Plan project can be mitigated to levels of insignificance as illustrated in the individual technical sections of this SEIR. Therefore, the alternatives examined here are directed toward lessening the significant adverse traffic, visual quality, grassland foraging area loss and noise impacts that would result in the Southwest Plan Area as influenced through the Redevelopment Plan project.

The Environmentally Superior Alternative is also designated. Under CEQA, if the alternative with the least environmental impact is the No Project Alternative, then at least one of the other alternatives must be designated as the Environmentally Superior Alternative. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative are to be discussed but in less detail than the significant effects of the project as proposed.

Accordingly, the Redevelopment Plan alternatives evaluated are as follows:

- No Project Alternative
- Reduced Redevelopment Plan Project
- Expanded Redevelopment Plan Project
- Environmentally Superior Alternative

6.1 NO PROJECT ALTERNATIVE

Under the No Project Alternative there would be no Redevelopment Plan project as currently proposed. Accordingly, this discussion of the No Project alternative evaluates both the impacts that would occur if blighted conditions within the Southwest Plan Area remain essentially as they are today, as well as the effects that could reasonably be expected to occur in the foreseeable future if the Redevelopment Plan is not implemented.

Under the No Project Alternative, the Redevelopment Plan would not be implemented and the basic objectives of the Redevelopment Plan would not be realized. The Redevelopment Plan is essentially a financing mechanism intended to assist in revitalizing the Southwest Plan Area as discussed previously. A Goal of the Redevelopment Plan is to remove impediments to develop and rehabilitate Redevelopment Subareas A and B by the private sector, thereby alleviating blighting conditions. Neither the Development Assistance Program, Public Projects Program or Housing Program would be implemented. Without the Redevelopment Plan, there would be no publicly sponsored stimulus to remove blighted conditions and there would be no further encouragement to the private sector to make investments that would lead to the further removal of blight within Redevelopment Areas A and B, and encourage investments in the Southwest Plan Area as a whole.

Without the Redevelopment Plan project, implementation of the Southwest Area Plan as adopted by the City Council would be hindered. The objective of Sonoma County and the City of Santa Rosa to improve the existing areas within the Southwest Plan Area that have been bypassed by new development and to ensure that the Southwest Plan Area is developed in a comprehensive manner that provides the infrastructure and diversity in housing stock for a growing population would not be fully realized. Existing impediments to development would likely not be effectively removed. For example, the lack of resolution of health and safety concerns caused by hazardous

materials contamination would continue, the inadequacy of public utilities would continue for a longer period of time than if the Redevelopment Plan were put in place now, circulation deficiencies would likewise continue, and dilapidated unsafe structures would remain in place for an unspecified period of time.

It is recognized that the Redevelopment Plan would be implemented over a 30 year period. Therefore, significant improvement is not likely to occur in the very near term, but nevertheless, without the Redevelopment Plan project, a catalyst to bring about organized rehabilitation and revitalization of the Southwest Plan Area would not occur under the No Project Alternative. It is expected that the unavoidable, significant adverse traffic, visual quality loss of grassland foraging area and noise impacts would occur under this alternative through cumulative growth in the long term throughout the Southwest Plan Area, but at a slower pace in the absence of redevelopment and removal of blight.

Under the No Project Alternative, the beneficial impacts of the Redevelopment Plan project would not occur, including improving air quality through stimulating the development of roadway and circulation projects to improve traffic flow, assisting in the remediation of sites contaminated with hazardous materials, in stimulating development furthering the objectives of enhanced community design as envisioned in the Southwest Area Plan, and the removal of structures that are dilapidated and unsafe. Without the Redevelopment Plan project, there would be no public stimulus to implement the Southwest Area Plan and fully realize the benefits of advancing the policies of the City to promote City centered growth to minimize public service costs and protect undeveloped lands from development outside the Urban Boundary. In addition, the City could be hampered in its endeavor to meet its State mandated housing goals, and to meet its assigned fair share of regional housing needs, including the provision of affordable housing. It is noted that without the Redevelopment Plan, some public investment could still occur with respect to infrastructure projects and existing housing programs. However, such revenues would be significantly less than would be possible through the Redevelopment Plan project.

In sum, under the No Project Alternative, the beneficial impacts of the Redevelopment Plan project as explained above would not be fully realized. In addition, the significant adverse

impacts relating to traffic congestion on U.S. 101, visual quality, loss of grassland foraging area and noise impacts on existing land uses over the long term would still be expected to occur.

6.2 REDUCED REDEVELOPMENT PLAN PROJECT

The Preliminary Report proposed Redevelopment Plan contains information on the proposed method of financing redevelopment and the removal of blight, including information on the economic feasibility of the Redevelopment Project Area (Redevelopment Subareas A and B), and the reasons for including tax increment financing. Economic feasibility can be defined as the determination of whether the resources to be generated from the Redevelopment Project Area are sufficient to finance the costs of the Redevelopment Plan programs that are needed to alleviate blight. The Preliminary Report contains a cash flow analysis to show redevelopment project area financing over the initial ten years, and total tax increment revenues have been compared to total costs over the full 40 year period within which the Redevelopment Plan is to be effective to determine the overall economic feasibility of the Redevelopment Plan.

The key question is what level of effort is financially feasible given existing conditions in the Southwest Plan Area and goals of the Redevelopment Agency. The total costs for the Redevelopment Agency's revitalization effort over the thirty year Redevelopment Plan period is estimated at about \$77 million in 1999 dollars. This amount does not include the impacts of inflation, the interest costs associated with the borrowing of funds to implement the Plan, or the mandatory payment of funds to the taxing entities required under Community Redevelopment Law. The Redevelopment Plan would authorize the Agency to fund activities from a variety of sources, including financial assistance from the City, County, State and Federal government; tax increment funds; Agency bonds; donations; special assessment districts; interest income; loans from private financial institutions; the lease or sale of Agency owned property; and any other legally available public or private funding sources.

A fiscal analysis for the Redevelopment Plan does indicate that the Redevelopment Project Area is financially feasible given the set of assumptions that underlie the fiscal projections. The primary assumptions are that the costs for redevelopment are as projected and that new development activity would occur as the Agency begins to remove impediments to development.

Under a reduced funding scenario, it is doubtful that the objectives of the Redevelopment Agency as currently established would likely occur. In other words, under a reduced Redevelopment Plan project as considered here with more limited financing, the removal of blight and impediments to development would also be more limited. The impacts relating to traffic congestion on U.S. 101, visual quality, loss of grassland foraging area and noise would still be expected to occur through development both regionally and within the Southwest Plan Area as well over the long term. The magnitude of the beneficial impacts of the Redevelopment Plan project as explained above under the No Project Alternative would not be expected to be as significant, but could still occur. Given the thirty year time frame the Redevelopment Plan would be active, it is difficult to project with certainty how social and economic conditions within the area will evolve. It is noted that the housing programs have little or no reliable ongoing funding sources other than tax increment financing under the Redevelopment Plan as proposed. Overall, the analysis contained in the Redevelopment Plan Preliminary Report indicates that as established, the Agency can meet the costs for the program as currently outlined.

6.3 EXPANDED REDEVELOPMENT PLAN PROJECT

This alternative explores, in a general way, if an expanded and therefore fiscally greater Redevelopment Plan would sufficiently mitigate the significant U.S. 101 traffic congestion, visual quality and noise impacts identified for the project.

The proposed Redevelopment Plan Area was selected based on specific criteria in the Community Redevelopment Law, including the existence of blight, there being no other financial means available to remove the blight without redevelopment and that the area be predominantly urbanized. Based on a survey of the whole Southwest Plan Area, it was determined that Redevelopment Subareas A and B were the areas eligible for inclusion in a redevelopment project area. Although any additional area would increase the revenues available to the Agency for redevelopment purposes, it would not generate enough additional revenue to mitigate any of the significant unavoidable adverse impacts identified.

As noted above, the Redevelopment Plan as currently proposed is considered financially feasible. Given the magnitude of the redevelopment effort and the lack of other ongoing funding sources,

the Redevelopment Agency will need to look to tax increment financing as a major source of funding. Neither the City, County nor the private sector has historically been able to finance a redevelopment effort of this type.⁵ Other funding sources have serious limitations. For example, grants from other levels of government are sporadic and difficult to obtain. Assessment districts can increase the costs for private development and further discourage blight remediation. Development impact fees can only be set at a level to cover the impacts that are created by development and cannot be used to raise additional funds to remove existing deficiencies. On the other hand, tax increment provides a stable source of revenue that grows as redevelopment efforts begin to have an effect.

Given the 30 year time frame for Redevelopment Plan implementation, how the various other potential funding sources other than tax increment financing will play out is uncertain at this time. As required under California Redevelopment Law, the Redevelopment Agency will continue to look to other funding sources to assist in the redevelopment effort. Therefore, to the degree that additional funds may actually become available through alternative funding sources, the Redevelopment Plan may be able to be expanded to finance, for example, additional infrastructure projects beyond that currently anticipated in the proposed Redevelopment Plan. Should this be the case, which is somewhat speculative, there could be corresponding incentives for the private sector and area residents and businesses to invest in new projects and further assist in the revitalization of the Southwest Plan Area.

Under this scenario however, the unavoidable significant adverse traffic congestion impacts on U.S. 101, visual quality impacts, loss of grassland foraging area and traffic noise impacts on existing land uses would still occur. This would be the result of cumulative as well as Southwest Plan Area growth anticipated under the City's General Plan and Southwest Area Plan. The benefits of the Redevelopment Plan as described above under the No Project Alternative would still occur, as opposed to the reduced level of benefits that would occur under the Reduced Redevelopment Plan Project Alternative. All other significant impacts as identified in this SEIR could be mitigated to levels of insignificance through implementing the mitigation measures as identified in the respective technical sections of this document.

6.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

As explained previously under the No Project Alternative, the significant unavoidable environmental impacts identified for buildout of the Southwest Plan Area would occur without the Redevelopment Plan project. This assumes buildout of the Southwest Plan Area at some future point in time. The traffic congestion impacts on U.S. 101 would be largely the result of cumulative area development and growth. The visual, loss of grassland foraging habitat and noise impacts within the Southwest Plan Area would be more the result of development and growth within the Southwest Plan Area itself, and could occur at a slower pace in the absence of redevelopment and removal of blight under the No Project Alternative.

Thus, the No Project Alternative would not be an Environmentally Superior Alternative. In addition, neither the Reduced or Expanded Redevelopment Plan Project Alternative would appear to be an Environmentally Superior Alternative, given that the unavoidable significant impacts identified would remain in either case. Given the 30 year period for implementing the Redevelopment Plan project, the Expanded Redevelopment Plan Project Alternative with increased financing potential is somewhat speculative as explained previously. On the other hand the Redevelopment Plan project as proposed is based on an assessment of existing blighted conditions and a cost analysis to remove blight and stimulate development is provided accordingly. Additionally, there are certain environmental and community planning benefits to be associated with implementing the Redevelopment Plan project as proposed as explained previously. Because it was shown that most significant impacts can be mitigated to levels of insignificance for the Redevelopment Plan project as proposed, because the Reduced and Expanded Redevelopment Plan Projects appear ineffective and speculative respectively, and because there are specified environmental benefits with respect to the Redevelopment Plan project as proposed, the Environmentally Superior Alternative is considered to be the Redevelopment Plan project as proposed with all of the mitigation measures identified in this SEIR factored into the project. These mitigation measures are as explained in each of the technical sections of this SEIR.

Notes - Alternatives

1. State CEQA Guidelines, Section 15126.6 (b).

2. State CEQA Guidelines, Section 15126.6 (c).
3. State CEQA Guidelines, Section 15126.6 (f) (1).
4. State CEQA Guidelines, Section 15126.6 (c).
5. Op. Cit. Page 37.

7. IRREVERSIBLE ENVIRONMENTAL CHANGES THAT WOULD OCCUR FROM IMPLEMENTATION OF THE PROPOSED REDEVELOPMENT PLAN PROJECT

Implementation of the proposed Southwest Area Redevelopment Plan project is intended to assist in revitalizing the Southwest Plan Area. A goal of the Redevelopment Plan is to remove impediments to develop and rehabilitate the Plan Area by the private sector, thereby alleviating blighting conditions (see Section 2, *Project Description* for further information). Key to the financial feasibility of the proposed Redevelopment Plan project will be facilitating new development during the next ten years. Tax increment revenues from the new development will be needed to finance redevelopment in the balance of the Redevelopment Area.

Historically, portions of the Southwest Plan Area have been used for grazing and other agricultural activities such as the growing of crops. During the last century, the development of residential and commercial structures within the Southwest Plan Area has converted a rural setting to a semi-rural to urban setting, particularly in the northern part of the Southwest Plan Area near Highway 12 and along U.S. 101 to the east. Characteristics unique to the Southwest Plan Area include access to the major transportation corridors of U.S. Highway 101 and State Highway 12, the existing semi-rural to rural setting within close proximity to downtown Santa Rosa and other developed areas, the scenic quality of adjacent undeveloped land, and wildlife values of existing wetlands. The Southwest Plan Area also represents an important opportunity to meet a variety of public and private objectives for use of the land consistent with the Southwest Area Plan.

At the current time, the Southwest Plan Area, inclusive of Redevelopment Subareas A and B, is not being utilized to its maximum potential. Some parcels are vacant and are not being used for any productive purposes, and there are some dilapidated buildings in the area. Implementation of the proposed Redevelopment Plan would be expected to directly stimulate development within Redevelopment Subareas A and B, and indirectly stimulate development throughout the larger Southwest Plan Area because of the removal of blight and enhancement of properties and land values within Redevelopment Subareas A and B.

The construction of residential, commercial and mixed use projects would be long-term extending well into the next century, and in some cases irreversible. There would be increases in land use productivity, an intensification of land use because of growth and infill, changes in the visual makeup of the community, and larger daily populations within the Southwest Plan Area.

There would be several irreversible environmental changes which would occur because of new development within the Southwest Plan Area, as stimulated through the Redevelopment Plan project. Among these irreversible changes would be the commitment of non-renewable energy resources and of non-recyclable (by present technology) material resources used for the construction and operation of projects within the Plan Area. In addition, Plan Area buildout would involve the irretrievable commitment of existing and expanded infrastructure facilities such as gas, electricity, water supply and sewer services to Plan Area residents, but not necessarily in a wasteful manner if used in accordance with the guidelines of agencies having jurisdiction over their use.

Visual change in the Southwest Plan Area would be irreversible because of the development of structures and roads. Other irreversible environmental changes associated with Southwest Plan Area buildout would be increased traffic volumes on local roadways such as U.S. 101, Highway 12 and existing and new neighborhood roads in the Plan Area, and the loss of grassland foraging area for wildlife. There would also be increased levels of noise and air emissions from project-related construction and traffic. However, with the exception of the unavoidable adverse impacts relating to visual quality, increased traffic noise affecting existing land uses, loss of grassland foraging area for wildlife, and traffic on U.S. Highway 101, mitigation measures are established to mitigate all other identified impacts to levels of insignificance (see Section 5 for a description of Unavoidable, Significant Adverse Impacts).

There are also several benefits of the Redevelopment Plan project as relates to irreversible environmental changes. The link or nexus is that implementation of the Southwest Area Plan would be assisted through the proposed Redevelopment Plan project. In this light, the Area Plan as furthered and supported by the Redevelopment Plan would advance the policies of the City of Santa Rosa and Sonoma County to promote City centered growth. This in turn would slow the

*7. Irreversible Environmental Changes That Would Occur from Implementation
of the Proposed Redevelopment Plan Project*

rate of loss of agricultural lands and open space outside the Urban Boundary that otherwise may be converted to urban development. Instead, growth would be focused in the urban environmental setting rather than in rural, unincorporated areas. In addition, the cost of providing public services would be minimized by producing a more compact and efficient pattern of development.

1. The first part of the document is a letter from the President of the United States to the Congress, dated January 1, 1801.

2. The second part is a report from the Secretary of the Treasury, dated January 1, 1801, on the state of the Treasury.

3. The third part is a report from the Secretary of the Navy, dated January 1, 1801, on the state of the Navy.

4. The fourth part is a report from the Secretary of the War, dated January 1, 1801, on the state of the War.

5. The fifth part is a report from the Secretary of the Interior, dated January 1, 1801, on the state of the Interior.

6. The sixth part is a report from the Secretary of the State, dated January 1, 1801, on the state of the State.

7. The seventh part is a report from the Secretary of the War, dated January 1, 1801, on the state of the War.

8. The eighth part is a report from the Secretary of the Navy, dated January 1, 1801, on the state of the Navy.

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APPENDIX A

LIST OF INFRASTRUCTURE PROJECTS

Legend:¹

- Project Completed
- Project Partially Completed
- Project Under Construction

¹ As of Jan. 11, 2000. Source: Ralph Russe, Department of Community Development.

Table A-1 ROAD INFRASTRUCTURE PROJECTS

Project Name (General Location)	Range Description From-- To	R-O-W (feet)	# of Lanes	By
Baker Avenue Overcrossing	Corby Avenue to Santa Rosa Avenue	82-B&SW	4	CT
Bellevue Avenue	Stony Point Road to Highway 101	90-B	3-4	BIP
Bellevue Interchange	U.S. Highway 101	82-B&SW	4	BIP
Bellevue-Ludwig Connector	Colgan Creek Channel to Ludwig Avenue	90-B	4	BIP
Burbank Avenue	Sebastopol Rd to Northpoint Pkwy Ext.	52	2	D
Corby Avenue	Baker Avenue to Hearn Avenue	68+	4	CT
Dowd - Wiljan Connector	Connect Dowd Drive with Wiljan Court	60	2	CIP
Dutton Avenue Connection	Hearn Avenue to Northpoint Pkwy-East	90-B	4	BIP
Fresno Avenue -North	Sebastopol Rd to Northpoint Pkwy-West	62-B	3	D
Fresno Avenue -South	Northpoint Parkway to Ludwig Avenue	52	2-3	D
Fulton/Wright Interchange	State Highway 12	82+-B&SW	4-6	BIP
Hearn Avenue -West	Stony Point Road to Dutton Ave	52	3	BIP
Hearn Avenue -East	Dutton Avenue to Highway 101	90-B	4	BIP
Hearn Interchange Dowd/Corby Connection	Dowd Drive to Santa Rosa Avenue Connect Corby with Dowd Drive	82-B&SW 24	4 2	BIP CIP
Highway 12	Stony Point Road to Dutton Avenue	AUX	4+2	CT
Highway 101	Highway 12 to Wilfred Avenue	HOV+ AUX	6+2	CT
Juniper Avenue	Bellevue Avenue to Todd Road	52	2	D
Ludwig Avenue	S. Wright to Stony Point Road	62-B	2-3	D
Moorland Avenue	Bellevue Avenue to Bellevue Ramps Bellevue Ramps to Todd Road	68+ 52	4 2	BIP D
Northpoint Parkway -East	Stony Point Rd to southern Dutton Ave	90-B	4	BIP

Table A-1 (Cont'd.)

Project Name (General Location)	Range Description From - To	R-O-W (feet)	# of Lanes	By
Northpoint Parkway -West	Corporate Center to Fresno Ave Fresno Avenue to S. Wright Rd	90-B 62-B	4 3	D D
Sebastopol Road -East	Stony Point Road to Olive Street	90-B	4	BIP
Sebastopol Road -West	Corporate Center Pkwy to Wright Road	90-B	4	BIP
S. Dutton Avenue	Northpoint Parkway to Bellevue Avenue	52	2	D
N. Wright Road	Highway 12 to Sebastopol Road	90-B	4	BIP
S. Wright Road - North	Sebastopol Road to Northpoint Parkway	62-B	3	BIP
S. Wright Road - South	Northpoint Parkway to Ludwig Avenue	62-B	2-3	D
Stony Point Rd. Interchange	Occidental Rd to Sebastopol Road	94+-B&SW	6	CIP/CT
Stony Point Road -North	Sebastopol Road to Northpoint Parkway	90-B	4	BIP
Stony Point Road -South	Northpoint Parkway to Bellevue/Ludwig	90-B	5	BIP
Stony Point Rd. Far South	Bellevue/Ludwig to Todd Road	86-B	4	BIP
Todd Road	Stony Point Road to Standish Ave Standish to U.S. 101	86-B 90-B	4 4	BIP BIP
Todd Interchange (Partial Cloverleaf)	Moorland Avenue to Santa Rosa Avenue	82+-B&SW	4	CT

R-O-W (Right-of-Way) LEGEND:

AUX Auxillary Lane
 B Bike Lane
 B&SW Bike Lane and Sidewalk on Overcrossing
 HOV High Occupancy Vehicle Lane

IMPROVEMENTS BY LEGEND:

BIP Backbone Infrastructure Program
 CIP Capital Improvement Program
 CT CalTrans
 D Developer

RIGHT-OF-WAY REFERENCE STANDARDS: (-C- = Centerline of Road..... TWLTL = Two-Way-Left-Turn-Lane)

52	COLLECTOR	6' Planter + 8' Parking + 12' Travel -C-
62-B	COLLECTOR	6' Planter + 8' Parking + 5' Bike + 12' Travel -C-
	or	6' Planter + 6' Bike + 12' Travel + 14 TWLTL
68+	MAJOR	8' Planter + 14' Travel + 12' Travel -C- (No Parking)
82+-B&SW	OVERCROSSING	6' Sidewalk + 5' Bike + 5-12' Travel Lanes + 5' Bike + 6' Sidewalk
86-B	MAJOR	6' Shoulder + 6' Bike + 2-12' Travel + 14' TWLTL + 2'-12' Travel + 6' Bike + 6' Shoulder
90-B	MAJOR	8' Planter + 8' Parking + 5' Bike + 2-12' Travel -C-
	or	8' Planter + 6' Bike + 2-12' Travel + 14 TWLTL
94 B&SW	OVERCROSSING	6' Sidewalk + 5' Bike + 6-12' Travel Lanes + 5' Bike + 6' Sidewalk

Table A-2 - WATER INFRASTRUCTURE PROJECTS

Location	From - To	Distance feet	Size inches/1/	By
Water Aqueduct Intertie	Sebastopol Rd - Hearn Avenue (NWPRR)	18,300	36	SCWA
Bellevue-Ludwig Connector	Stony Point Rd - Colgan Creek Channel	1,400	12	BI
Burbank Avenue	Hughes Ave - Hearn Ave	3,900	12	D
Dutton Avenue Connection	Hearn Avenue to Northpoint Parkway-East	1,900	12	BI
Fresno Ave	Sebastopol Road - Ludwig Ave	8,400	12	D
Liana Drive	Burbank Ave - West Ave	1,950	12	D/CIP
Ludwig Ave	S. Wright Road - Stony Point Rd	7,850	12	BI
Juniper Avenue	Bellevue Ave - Todd Rd	4,700	12	D
Northpoint Pkwy - East	Hearn Ave - Lower Dutton Ave	3,100	12	BI
Northpoint Pkwy - West	South Wright Rd - Corporate Center Pkwy	3,550	12	D
Sebastopol Rd -East	Stony Point Rd - Olive (Upgrade 3 sections)	4,400	12	CIP
South Dutton Ave	Northpoint Pkwy - Bellevue Ave	4,000	12	D
South Wright Road - North	Sebastopol Rd - Northpoint Parkway- West	3,400	12	BI
South Wright Road - South	Northpoint Parkway - Ludwig Ave	4,200	12	BI
Stony Point Rd	Lazzini Ave - Marble St	310	12	CIP
Stony Point Rd	Northpoint Parkway - Bellevue Ave	4,200	12	BI
Todd Road	Juniper Ave - Standish Ave	1,100	12	D
Yuba Drive	Stony Point Rd - Potential Elementary School	est 1,000	12	D

Legend: BI= Backbone Infrastructure Program
CIP= Capital Improvement Program
D= Developer Responsibility
SCWA= Sonoma County Water Agency Project

Notes: /1/

Water main sizing is projected based upon the assumption that the SCWA Water Aqueduct Intertie is constructed. In the interim, water mains may need to be upsized to achieve the required fire and peak usage flows.

Table A-3 - STORM DRAINAGE INFRASTRUCTURE PROJECTS

Project Name	From - To	Distance feet	Size inches	By
Colgan Creek Channel	Corby Avenue to the NWP Railroad Tracks.	1600-2600	Lining	SE
Conceptual Area Drainages: West Hearn/Yuba/Ludwig Area	A series of conceptual drainage conduits	U	U	D
■ Fresno Avenue Conduits	Several conduits which drain the north-south runway area of the Air Center.	12,500	36-72	D
■ Hearn Avenue / Colgan Diversion Conduit	From Dutton Avenue west along Hearn Avenue to the existing conduit at Elsie Allen High.	6300	18-36	SCWA & D
Moorland Avenue Conduit	From just south of West Robles Avenue to Todd Road, then west to the Moorland Channel.	2900	U	D
Naval Creek	West of the north-south runway to S. Wright Road, then north to the Naval Creek Channel.	2500	U	D & SCWA
Naval Creek Channel	West of South Wright Road to Laguna	U	U	SCWA/D
□ Northpoint Village Conduit	Provides drainage for the Northpoint Village	2600	U	D
■ Roseland Creek Channel	From Ludwig Avenue north to the 90 degree bend (SW corner of Northpoint Business Park).	3800	Widen Channel	D
□ Sebastopol Road Conduit	Brittain Ln to Sebastopol Rd, west under Hwy 12, to a channel northerly of Occidental Road. Also includes drainage from Golden Gate/Leddy.	8500	18-84	D & SCWA
■ South Dutton Avenue Conduit	Hearn Avenue south to Colgan Creek Channel	5000	U	D
South Wright Conduit	Finely Avenue west to S. Wright, south on S. Wright to Naval Creek Channel.	4900	18-60	SCWA
Springfield Drainages	2 conceptual drainages from the vicinity of Pyle Avenue to Roseland Creek.	U	U	D
■ Stony Point Road Conduit	Hearn Avenue to Colgan Channel	8500	18-60	SCWA

Table A-3 (Cont'd.)

Project Name	From - To	Distance feet	Size inches	By
West Avenue Supplementary Conduit	An additional conduit under West Ave to convey drainage from upper Roseland Creek watershed.	60	U	SCWA
West Robles Conduit	From Dutton Ave to Colgan Creek Channel.	4600	48-84	SCWA

LEGEND:

D Developer Responsibility
 SCWA Sonoma County Water Agency
 SE Southeast Area Plan Infrastructure Responsibility
 U Undetermined

NOTES:

1. Distances and sizings are general estimates based upon conceptual alignments and are subject to revision
2. Many projects could be undertaken as joint efforts of the SCWA and individual developers. SCWA funding is not assured, however.
3. Funding for a portion of these projects is included within the Roadway Infrastructure costs, where drainage conduits coincide with roadway projects. Additional funds may be available through SCWA, Zone 1A funds.

SUPPLEMENTARY INFORMATION

ROAD PROJECTS

- Bellevue Avenue - 50 feet of additional right-of-way width will be necessary from Mooreland Avenue to the Northwestern Pacific Railroad tracks (NWPRR).
- Bellevue Avenue Interchange - the proposal is to extend Bellevue Avenue from the west side of U.S. 101 to Santa Rosa Avenue on the east side of U.S. 101. A four lane overcrossing is proposed over the freeway (see Figure 2.2-6, Bellevue Avenue Interchange). North and southbound button-hook ramps would connect to Santa Rosa Avenue on the east side of the freeway and Moorland Avenue on the west side of the freeway, about 300 feet south of Bellevue Avenue. Corby Avenue, the west frontage road, will need to be realigned at Bellevue Avenue. A portion of this realignment has already been constructed by the City of Santa Rosa. Some improved commercial and residential property would be required for new right-of-way for this project.

As an alternative to the interchange proposal, Bellevue Avenue would be extended over U.S. 101 as a four lane overpass without the north and southbound button-hook ramps.

- Bellevue-Ludwig Connector - this will be a new road from Stony Point Road to Colgan Creek Channel (at Bellevue Avenue) in a 90 foot wide right-of-way.
- Burbank Avenue - this street will be upgraded to a collector street within a 52 foot wide right-of-way. Reconstruction would result in the removal of existing roadside ditches. The road also crosses Roseland Creek which could be narrowed at this point to avoid Creek impacts.
- The Dowd Drive connection to Wiljan Ct. consisted of approximately 650 feet of new collector street through vacant parcels.
- The Dutton Avenue connection is a proposed new arterial street extended from Hearn Avenue for approximately 1,800 feet to the proposed new Northpoint Parkway.
- Fresno Avenue would extend from it's southerly terminus at Finley Avenue to Ludwig Avenue. This road would extend the length of the Old Naval Air Station north-south runway and parallel Roseland Creek on it's southern reach.
- Fulton/Wright Interchange - the proposal is to extend North Wright Road over State Highway 12 to connect with Fulton Road. The highway overpass would consist of six lanes with connecting eastbound and westbound highway on and off-ramps provided at Highway 12 (see Figure 2.2-7, Hwy 12/Fulton/Wright Interchange).

- Hearn Avenue West - about two to 12 feet of additional right-of-way was added for this reconstruction project.
- Hearn Avenue East - Approximately 30 feet to 50 feet of additional right-of-way width is required for this project.
- Juniper Avenue - this road would require a 50 foot wide right-of-way. Some half street sections are in place, another section south of Bellevue Avenue is an unimproved rural road with roadside ditches.
- Ludwig Avenue - would be reconstructed within a 62 foot wide right-of-way. Construction on the north side will result in the removal of roadside ditches. The northern edge would be improved to City Standards while the southern edge would remain rural in nature (roadside ditches, no curb).
- Moorland Avenue - some sections of this road are already reconstructed. Other sections will be reconstructed as development occurs.
- Northpoint Parkway East - this would be a new road to be constructed within a 90 foot wide right-of-way. Approximately 5,800 feet of new arterial street would be constructed from Stony Point Road to the existing end of Dutton Avenue south of the Colgan Creek channel.
- Northpoint Parkway West - this new road would have a variable right-of-way from 62 to 90 feet in width. The road would extend westerly from the terminus of the existing Northpoint Parkway to South Wright Road. The 90 foot wide right-of-way would narrow to 62 feet just west of the proposed Community Commons (Shopping Center).
- Sebastopol Road West - would be reconstructed within a 90 foot wide right-of-way and result in the removal of roadside ditches.
- S. Dutton Ave. - this existing rural road will need to be completely rebuilt. Roadside ditches would be eliminated. This road will ultimately terminate at Northpoint Parkway instead of Hearn Avenue.
- S. Wright Road-North - This rural road will need to be rebuilt. There are existing homes north of Finley Avenue that are close to the right-of-way.
- S. Wright Road-South - this road would be reconstructed within a 62 foot wide right-of-way as development occurs. The eastern edge would be improved to City Standards with the western edge remaining rural in nature (roadside ditches, no curb).
- Stony Point Road-Far North - reconstructed with a 94 foot wide right-of-way. Right-of-way existed along the western side from Highway 12 south to Sebastopol Road. Right-of-way along the eastern side came from development or acquisition of additional land.

- Stony Point Road-North - most reconstruction would occur within the existing right-of-way. Some additional right-of-way would come from new developments as well as acquisitions.
- Stony Point Road-Far South - an 86 foot wide right-of-way is estimated by the City for this road. The street would be improved to County standards (no sidewalks).
- Todd Road (Stony Point to Standish) - an 86 foot wide right-of-way is estimated for this road. The street would be reconstructed to County standards (no sidewalks).
- Todd Road (Standish to U.S. 101) - a 90 foot wide right-of-way is estimated for this segment. Additional right-of-way will be needed in cases where development has already occurred.

STORM DRAINAGE PROJECTS

Most of the drainage improvements would be located under existing roads to replace or augment existing drainage facilities. Several proposed facilities would be not located within existing road rights-of-way and would constitute new construction projects within vacant lands. These projects are described here.

- Hearn Avenue/Colgan Diversion Conduit. Phase One of this project included the installation of a storm drain along Hearn Avenue, from Dutton Avenue to approximately 500 feet east of Stony Point Road, to carry the 10-year flow. Phase Two would consist of the installation of underground conduit from Hearn Avenue south to the existing storm drainage conduit running along the west side of Elsie Allen High School. The conduit would be designed to carry the 100-year flow from the 235 acre watershed developed to General Plan densities.
- Naval Creek. Naval Creek drainage will be tributary to a conduit following the alignment of South Wright Road in a northerly direction for approximately 850 feet. From this point, it will join with the South Wright Conduit (carrying drainage from the north), and head westerly within the proposed Naval Creek Channel to Merced Avenue and the Laguna.
- Springfield Conduits. These parallel drainages will convey drainage from the Springfield project area (south of Pyle), to the Roseland Creek Channel

APPENDIX B

**RARE, ENDANGERED OR THREATENED PLANT AND ANIMAL
SPECIES KNOWN TO OCCUR IN THE SOUTHWEST
SANTA ROSA AREA PLAN**

This amendment updates FEIR Appendix D to reflect changes as of January 2000 in nomenclature and status of those sensitive species of plants and animals with potential to occur within the Southwest Santa Rosa Redevelopment Plan Area. Species for which status has changed since the publication of the FEIR are indicated by an asterisk (*). Species which should be added to the list of those potentially occurring within the Southwest Santa Rosa Redevelopment Plan Area are indicated by two asterisks (**). Additional plant species for which the Milo Baker Chapter of the California Native Plant Society has expressed concern are indicated by three asterisks (***). Common and scientific names used in FEIR Appendix D which are no longer in preferred use are given in parentheses.

APPENDIX B

RARE, ENDANGERED OR THREATENED PLANT AND ANIMAL SPECIES KNOWN TO OCCUR IN THE SOUTHWEST SANTA ROSA AREA PLAN¹

PLANTS

Arctostaphylos canescens var. *sonomensis*

Sonoma Manzanita

STATUS: -/-/CNPS List 1B

HABITAT: Chaparral

BLOOM TIME: January-March

HABIT: perennial

NOTES: Known from Humboldt, Mendocino, Lake, and Sonoma Counties. Reaches its southernmost distribution point in Sonoma County. Suitable habitat is not present in the Southwest Area Plan.

Arctostaphylos stanfordiana ssp. *decumbens*

Rincon Ridge Manzanita

STATUS: -/-/CNPS List 1B

HABITAT: Chaparral

BLOOM TIME: February-April

HABIT: perennial

NOTES: Known primarily from Rincon Ridge, northeast of Santa Rosa. Occurs on red rhyolite soils along Alta Vista Avenue between Brush Creek Road and Montecito Heights. Believed extirpated at historic occurrences near the corner of Los Olivos and Brush Creek Roads at the east base of Rincon Ridge, and at the Fountaingrove Ranch Development off Parker Hill Road. Suitable habitat is not present in the Southwest Area Plan.

Astragalus breweri

Brewer's Milk Vetch

STATUS: -/-/CNPS List 4

HABITAT: Chaparral, Foothill Woodland, Valley Grassland

BLOOM TIME: April-May

HABIT: annual

NOTES: Known from restricted locations in the inner North Coast Ranges from southern Mendocino County to Marin County, and east to Yolo County. Often on ultramafic soils. Suitable habitat is not present in the Southwest Area Plan.

Blennosperma bakeri

Sonoma Sunshine (Baker's Stickyseed)

STATUS: FE/SE/CNPS List 1B

HABITAT: Vernal Pools

BLOOM TIME: March-April

HABIT: annual

NOTES: In the Southwest Santa Rosa Plan Area occurs south of Pyle Avenue adjacent to the southwest portion of the former Santa Rosa Air Center (proposed project #30).

Ceanothus confusus

Rincon Ridge Ceanothus

STATUS: FSC/-/CNPS List 1B

HABITAT: Chaparral, Foothill Woodland, Closed-cone Coniferous Forest

BLOOM TIME: February-April

HABIT: perennial mat-forming shrub

NOTES: Known from volcanic or serpentine soils in Lake, Mendocino, Napa, and Sonoma Counties. Historically abundant in some areas of Rincon Ridge, along Los Olivos Road, northeast of Santa Rosa, prior to early residential development. Historic occurrence in the vicinity of Rockridge Lane, off Montecito Road, north of Santa Rosa. Possibly extirpated at the site of the Fountaingrove Ranch development near the top of Parker Hill Road. Although little evidence of the species has been located in residential areas in recent years, several occurrences still exist along the upper ridges. Suitable habitat is not present in the Southwest Area Plan.

Ceanothus divergens

Calistoga Ceanothus

STATUS: FSC/-/CNPS List 1B

HABITAT: Chaparral (ultramafic)

BLOOM TIME: February-March

HABIT: perennial

NOTES: Occurs in Lake, Napa, and Sonoma Counties. In Sonoma County, it is known from Annadel State Park and isolated occurrences in the Hood Mountain range, Franz Valley and north and east to Mt. St. Helena and the Calistoga area. In the Santa Rosa Area, it is known from occurrences on Rincon Ridge, 3.5 miles north of Santa Rosa, and from approximately one mile southwest of Melita. Suitable habitat is not present in the Southwest Area Plan.

Ceanothus sonomensis

Sonoma Ceanothus

STATUS: FSC/-/CNPS List 1B

HABITAT: Chaparral

BLOOM TIME: February-April

HABIT: perennial

NOTES: Restricted to Sonoma County with the exception of one known population in Napa County. Occurs in the Hood Mountain Range and Annadel State Park. Except for population occurrences in State and county parks, this species is threatened throughout its entire range by

residential development and vineyard expansion. Suitable habitat is not present in the Southwest Area Plan.

Delphinium variegatum (white form)

White Delphinium

STATUS: none

HABITAT: Open grassy hills, valley grasslands, foothill woodlands

BLOOM TIME: April-May

HABIT: perennial

NOTES: The normal color of this species is light blue to rich blue-purple sepals, upper petals yellow or white sometimes tinged with violet, lower petals violet or rarely white. The local population is one of six known populations occurring in Napa and Sonoma Counties. The rarity of the color form and the evolutionary history occurring in the population warrant preservation in its natural habitat for further study.

Downingia pusilla (*humilis*)

Dwarf Downingia*

STATUS: -/-/CNPS List 2

HABITAT: Vernal Pools, Foothill Woodland & Grassland (mesic sites)

BLOOM TIME: March-May

HABIT: annual

NOTES: Known to occur in several counties, but restricted to habitat that is decreasing throughout the species range.

Fritillaria liliacea

Fragrant Fritillary

STATUS: FSC/-/CNPS List 1B

HABITAT: Coastal Scrub, Grassland (often serpentine)

BLOOM TIME: February-April

HABIT: perennial

NOTES: Ranges from Sonoma County south to Monterey County. Several historic locations in Sonoma County have been destroyed by loss of habitat. One known population still occurs in a scenic easement south of Park Trail Drive and the east side of Summerfield Road, within the City of Santa Rosa boundaries. Another population is known in Annadel State Park, east of Santa Rosa.

Hemizonia congesta ssp. *leucocephala*

Hayfield Tarplant***

STATUS: -/-/CNPS List 3

HABITAT: Common in open fields

BLOOM TIME: April to October

HABIT: annual

NOTES: Occurs in Todd Road Preserves.

Lasthenia burkei

Burke's Goldfields

STATUS: FE/S/CNPS List 1B

HABITAT: Vernal pools, mesic meadows

BLOOM TIME: April-May

HABIT: annual

NOTES: Historically known from one location in southern Mendocino County (now considered extirpated), two locations in south Lake County, and several locations in central Sonoma County. Distributed from Windsor south through the western Santa Rosa Plains. Several populations in the western Santa Rosa Plains and Windsor have been destroyed following transplant or seed transfer mitigation to another site. Known to occur north of State Highway west of Wright Road and southwest of Preakness Court.

Legenere limosa

Legenere**

STATUS: FSC/-/CNPS List 1B

HABITAT: Vernal Pools

BLOOM TIME: May to June

HABIT: annual

Notes: Observed 6.5 mi. NE of Penngrove on Lichau Road in 1969.

Lilium rubescens

Chaparral Lily, Redwood Lily

STATUS: -/-/CNPS List 4

HABITAT: Chaparral, Coniferous Forest, Mixed Evergreen Forest

BLOOM TIME: June-July

HABIT: perennial

NOTES: Occurs in the Coast Ranges south to Santa Cruz County. Known colonies near the City of Santa Rosa include a site west of Hood Mountain and in Annadel State Park. Suitable habitat is not present in the Southwest Area Plan.

Limnanthes vincularis

Sebastopol Meadowfoam

STATUS: FE/SE/CNPS List 1B

HABITAT: Vernal pools, mesic meadows, swales, and marshy areas

BLOOM TIME: March-April

HABIT: annual

NOTES: Occurs in southern Sonoma County, primarily in the Laguna de Santa Rosa watershed. South of Santa Rosa, colonies of thousands of plants observed in vernal pools in wet meadows north and south of Hern Avenue approximately 2000 feet east of Santa Rosa Avenue. Seriously threatened by development, off-road vehicles, and agricultural land use changes, including wastewater irrigation. Occurs in several locations and proposed project sites in the Southwest Area Plan.

Linanthus jepsonii

Jepson's Linanthus**

STATUS: none

NOTES: According to the California Department of Fish and Game's Natural Diversity Data Base, a large general area within which this species was collected in 1931 extends into the northeast portion of the Southwest Santa Rosa Redevelopment Plan Area (SEIR Figure B-4). It is highly unlikely that this species would occur in this area because of its long history of urban use.

*Lomatium repostum***Napa Lomatium**

STATUS: CNPS List 4

HABITAT: Chaparral, Foothill Woodland, Closed-cone Coniferous Forest

BLOOM TIME: April-May

HABIT: annual

NOTES: Found in chaparral in Lake, Napa, Solano, and Sonoma Counties. Occurs in several areas in the Hood Mountain Range. Historic locations were known from Rincon Ridge near Parker Hill Road but have not been relocated. Suitable habitat is not present in the Southwest Area Plan.

*Micropus amphibolus***Mt. Diablo Cottonweed*****

STATUS: CNPS List 4

NOTES: No occurrence information for this species is contained in the CNDDDB *RareFind* Report. According to *A Flora of Sonoma County* (Catherine Best, Howell, Knight, Knight, and Wells, California Native Plant Society 1996), occasional occurrences of this species have been observed on shallow soil on grassy slopes near rocky areas 3 mis. SE of Sonoma, hills east of Agua Caliente, Lafferty Ranch on Sonoma Mountain, Dorman Canyon 4 mis. west of Healdsburg, and Geyser Peak. No occurrences are recorded for Santa Rosa. Habitat for this species does not occur within the Southwest Santa Rosa Redevelopment Plan Area.

Navarretia leucocephala ssp. *bakeri***Baker's Navarretia****

STATUS: CNPS List 1B

NOTES: Formerly occurred in the vicinity of Wright School, west of the Santa Rosa Air Center. The California Department of Fish and Game's Natural Diversity Data Base reports that this population has been extirpated.

*Navarretia plieantha***Many-flowered Navarretia**

STATUS: FE/SE/CNPS List 1B

HABITAT: Vernal Pools, peaty lake margins

BLOOM TIME: May-June

HABIT: annual

NOTES: Known only from Lake and Sonoma Counties. Historically known to occur in Bennett Mountain Lake (Ledson Marsh) in Annadel State Park, but has not been observed there for several years. Two other locations are known in Sonoma County north of the City of Santa Rosa boundary. This species is extremely rare and its habitat is vulnerable to any land use change.

Perideridia gairdneri ssp. *gairdneri***Gairdner's Yampah*****

STATUS: FSC/-/CNPS List 4

HABITAT: Grassland, chaparral, vernal pools

BLOOM TIME: June to October

HABIT: perennial

NOTES: Occurs in Todd Road Preserve

Pleuropogon californicus var. *davyi***Davy's Semaphore Grass**

STATUS: -/-/CNPS List 4

HABITAT: Wet meadows

BLOOM TIME: 3 4 5

HABIT: perennial

NOTES: The *Pleuropogon davyi* specimens that were determined by Charles Patterson, Plant Ecologist, as occurring in the western Santa Rosa Plains were incorrectly identified (C. Patterson pers. com. 11/18/93 with B. Guggolz). *Pleuropogon davyi* is not known to occur in Sonoma County, although it is frequently misidentified because of its similarity to *Pleuropogon californicus*, a species common to the western Santa Rosa Plains, which was identified by EIR preparers within the Southwest Plan Area (Appendix E-6).

Pogogyne douglasii ssp. *parviflora***Douglas's Pogogyne**

STATUS: -/-/CNPS List 3

HABITAT: Dry beds of vernal pools, Grassland, Foothill Woodland, Freshwater Marshes

BLOOM TIME: May-July

HABIT: annual

NOTES: Habitat for this species in Sonoma County is seriously threatened by development in the few known locations remaining. Several historical sites in the Laguna de Santa Rosa watershed were destroyed by agricultural land use changes during the past decade. Occurs in several locations and proposed project sites in the Southwest Area.

*Ranunculus lobbii***Lobb's Aquatic Buttercup**

STATUS: -/-/CNPS List 4

HABITAT: Vernal Pools, mesic grassland and foothill woodland

BLOOM TIME: February-April

HABIT: annual

NOTES: The species ranges extensively over several Bay Area counties, but is dependent on wetland habitat which is decreasing throughout the state. Several populations have been observed in the western Santa Rosa plains, however, some of these have been destroyed by recent urban development. Occurs in several locations in and adjacent to the west central portion of the former Santa Rosa Air Center (proposed project #30).

*Trifolium amoenum***Showy Indian Clover**

STATUS: FE/-/CNPS List 1B

HABITAT: Grassland (swales, rich fields)

BLOOM TIME: April-June

HABIT: annual

NOTES: Found in serpentine soils in open sunny sites from sea level to 200 feet elevation. Several occurrences were known in Sonoma County, including an occurrence at Wright School on Price Avenue west of Wright Road. Recent field surveys of precise locations have failed to reconfirm the species at historical locations, and in most of the area searched, habitat has been altered by agricultural use. Thought to be extinct throughout its range, last seen in 1969.

BIRDS

*Ardea herodias***Great Blue Heron**

STATUS: CDF: Sensitive (rookery site)

HABITAT: Colonial nester in tall trees, cliffsides, and sequestered spots on marshes.

Rookery sites in close proximity to foraging areas such as marshes, lake margins, tide-flats, rivers and streams, wet meadows.

NOTES: Scattered adults observed foraging along drainages and in wetlands habitats in the southern area of the abandoned Naval Air Center during surveys for this report. Suitable rookery or nesting habitat were not identified anywhere on the Air Station but may be available somewhere within Southwest Area Plan boundaries.

*Casmerodius albus***Great Egret**

STATUS: CDF: Sensitive (rookery site)

HABITAT: Feeds in shallow water and along shores of estuaries, lakes, ditches, and slow-moving streams, salt ponds, mudflats and in irrigated croplands and pastures. Eats mainly fishes, amphibians, snakes, snails crustaceans and some small mammals. Nests in large trees at a height of 20-40 feet, usually near water.

NOTES: Scattered adults observed foraging along drainages and in wetlands habitats in the southern area of the abandoned Naval Air Center during surveys for this report. Suitable rookery or nesting habitat were not identified anywhere on the Air Station but may be available somewhere within Southwest Area Plan boundaries.

*Elanus caerulea*²**White-tailed Kite**

STATUS: CDFG Fully Protected (nesting)

HABITAT: Low rolling foothills/valley margins with scattered oaks and river bottomlands or marshes adjacent to deciduous woodland. Open grasslands, meadows or marshes for foraging close to isolated, dense-topped trees for nesting and perching.

NOTES: Habitat suitable for the maintenance and reproduction of this species is present within project boundaries. Birds were observed foraging at several locations in the Southwest Plan Area during surveys for this report. Suitable habitat for foraging and nesting are present on and near the abandoned Naval Air Center. A nesting pair was observed in the southwestern area of the Air Center on two occasions (May 13 and June 7, 1993) during surveys for this report. While the nest site was not located, courtship behavior and the timing of the presence of these birds indicated that nesting was underway in the area.

*Accipiter striatus*²**Sharp-shinned Hawk**

STATUS: -/CSC

HABITAT: All types of vegetation but prefers riparian. Uses mixed-conifer, ponderosa pine and black oak.

NOTES: Habitat suitable for the maintenance and reproduction of this species is present within project boundaries. A female of this species was observed foraging between the eastern boundary of the abandoned Naval Air Center and the FEMA site during surveys for this report. Her activities at this time of the surveys for this report (May 13, 1993 indicate strongly that this species is nesting within project boundaries.

*Buteo lineatus*²**Red-shouldered Hawk**

STATUS: none

HABITAT: Year-long resident in the western Sierra Nevada foothills and the Central Valley in low elevation riparian woodlands especially where interspersed with marshlands.

Forages and nests in early successional stages of valley-foothill hardwood and conifer habitats.

NOTES: Observed at several locations within the Southwest Area Plan during field surveys for this report. Marginal nesting habitat is available for this species near the old Naval Air Station and FEMA sites.

*Aquila chrysaetos***Golden Eagle**

STATUS: -/CSC, CDFG Fully Protected (nesting and wintering)

HABITAT: Rolling foothills, coast range terrain, sage juniper flats or desert habitats chiefly in the upper Sonoran and transition life zones.

NOTES: Species occasionally reported to forage in the Southwest Area Plan. Reported to hunt in areas near the abandoned Naval Air Center. None of this species observed during surveys for this report.

*Falco peregrinus anatum***American Peregrine Falcon***

STATUS: Federally Delisted 8/25/99/SE, CDFG Fully Protected, CDF: Sensitive

HABITAT: Riparian areas and coastal and inland marshes important habitats year-round but especially for foraging during nonbreeding seasons.

NOTES: Species occasionally reported to forage in the Southwest Area Plan. Reported to hunt in areas near the abandoned Naval Air Center. None of this species observed during surveys for this report.

*Tyto alba*²**Common Barn Owl**

STATUS: None

HABITAT: Open grassland, chaparral, deciduous riparian and wet meadows.

Very common on the site during the late summer. No nests or roosts located on site to date. Status to be reported in final WHMP report.

NOTES: The availability of numerous nesting sites in open, abandoned buildings and barns and the rich diversity of rodent prey species make the Southwest Area Plan an excellent area for this species. Birds of this species were observed in the Kodiak hangar on the abandoned Naval Air Center. Owl pellets found at several locations indicated the widespread distribution of this species within the Southwest Area Plan.

*Asio flammeus*²**Short-eared Owl**

STATUS: -/CSC (Nesting)

HABITAT: Found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches and tall grass needed for nesting and daytime seclusion. Nests on dry ground in depression concealed in vegetation.

NOTES: Birds have been reported by a falconer in 1993 to be foraging in grassland habitats on the abandoned Naval Air Center near along the margins of the runways. None of this diurnal species of owl was observed during surveys for this report.

*Athene cunicularia hypugea*²**Burrowing Owl***

STATUS: FSC/CSC, (burrow sites)

HABITAT: Open, dry, nearly or quite level grassland; prairie and desert floors.

Subterranean nester dependent on large burrowing mammals, most notably the California ground squirrel, for nest sites.

NOTES: Birds have been recently observed near the center of the abandoned Air Station near along the margins of the runways. An "accidental take" of an adult bird was reported during activities by a falconer on the site in 1993. None of this species was observed during surveys for this report, however, the extremely high grass resulting from the heavy rains of this winter would make detection of this small owl very difficult.

*Strix occidentalis caurina***Northern Spotted Owl**

STATUS: FT/CDFG Sensitive

HABITAT: Generally found in densely forested, shady canyons and dense conifer and/or oak forest, usually multilayered and with a high degree of canopy closure. Nests sites are usually located on lower slopes of canyons near a source of water. Hunts from elevated perches. Prey items include small mammals, birds and insects.

NOTES: Nesting territories of this species are reported to occur in Santa Rosa and Kenwood USGS Quadrangles in Sonoma County. Precise locational information not available in the CNDDB. Suppressed informaton on the location and numbers of breeding pairs is maintained in the CDFG 1991 Spotted Owl Database. Habitats suitable for the maintenance and reproduction of this species are not present within Southwest Area Plan boundaries and none of this species was observed during surveys for this report.

*Larus californicus***California Gull**

STATUS: -/CSC (nesting colonies)

HABITAT: Winter visitant to coastal and interior lowlands during the nonbreeding season. Omnivorous. Adults roost in large concentrations along shorelines, in landfills, pastures and on islands.

NOTES: Scattered individuals observed near the abandoned Naval Air Center during field surveys. This species may utilize the site and its freshwater habitats for foraging.

*Lanius ludovicianus*²**Loggerhead Shrike***

STATUS: FSC/CSC

HABITAT: Year-round residents of lowlands and foothills throughout much of California. Prefers open habitats with scattered shrubs, trees, fences, or other lookout posts. Highest densities occur in open-canopied, valley-foothill hardwood, hardwood-conifer and riparian habitats. Feeds on insects, small birds, mammals and reptiles but amphibians, fish, carrion and various invertebrates are also taken.

NOTES: Observed at several locations within the Southwest Area Plan during field surveys for this report. Nesting habitat is available for this species near the old Naval Air Station and FEMA sites and at a number of other locations within the Southwest Area Plan were individuals were observed. The presence of these birds in the Southwest Area Plan at the time of the wildlife surveys and some of the behavioral activities of the birds indicated strongly that nesting was occurring within project boundaries.

*Coccyzus americanus occidentalis***Western Yellow Billed Cuckoo**

STATUS: -/SE

HABITAT: Nests in extensive areas of riparian jungles of willow, often mixed with cottonwoods, blackberry, nettles, or wild grape.

NOTES: The dense willow thicket, riparian habitat, of the type required by this species for maintenance and reproduction, is no longer present within Southwest Area Plan boundaries. None of this was species observed during surveys for this report. The nearest and most recently reported occurrence of this rare bird was at Copeland Creek, east of Lichau Road near Sonoma State College in 1975. It is extremely unlikely that this bird will again be found in the Southwest Plan Area.

MAMMALS

*Corynorhinus (Plecotus) townsendii townsendii*²**Townsend's Western Big-eared Bat**

STATUS: -/CSC

HABITAT: Mesic habitats in all but subalpine and alpine regions. Needs water. Gleans from brush or trees along habitat edges.

NOTES: Roosting habitat in old buildings and barns is available at various locations within Southwest Area Plan boundaries. No evidence of the use of buildings or barns for roosting by bats was noted during surveys for this report. Intensive, timely searches would be necessary to positively identify the presence of this species on the project site.

REPTILES AND AMPHIBIANS

*Ambystoma tigrinum californiense*²**California Tiger Salamander***

STATUS: FC/CSC, CDFG Protected

HABITAT: Breed and lay eggs in vernal pools. Open grassland habitats at elevations of less than 1,000 feet. Requires large numbers of rodent burrows and other subterranean refugia.

NOTES: Suitable, seasonal wetlands habitats and vernal pools are present at a number of locations throughout the Southwest Area Plan. While many of these seasonal wetlands have been heavily damaged by agriculture and other developments, remnant habitats suitable for breeding are available within the Southwest Area Plan and viable populations of CTS have persisted. Adults and larvae were found during searches and seining of seasonal wetlands habitats during surveys for this report. These are discussed in more detail in the preceding Southwest Area Plan report.

*Rana aurora draytoni*²**California Red-legged Frog***

STATUS: FT/CSC, CDFG Protected

HABITAT: Quiet pools of steams, marshes and occasionally ponds in coast ranges below 4,000 feet. Prefers shorelines with extensive vegetation. Red-legged frogs are generally absent from ponds and streams occupied by bullfrogs (*Rana catesbeiana*) which prey upon them.

NOTES: Habitats of type required by this species are available along portions of the Colgan Creek Flood Control Channel, Roseland Creek and its unnamed tributaries and other isolated,

remnant aquatic habitats within the Southwest Area Plan. No larvae or adults of this species were found during searches and seining of aquatic habitats during surveys for this report.

Scaphiopus hammondi hammondi

Western Spadefoot Toad

STATUS: -/-/CDFG Protected

HABITAT: Occurs primarily in grassland situations, but occasional populations also occur in valley foothill hardwood woodlands. Rarely found on the surface. Most of the year is spent in underground burrows. Breeding and egg laying occur almost exclusively in shallow, temporary pools formed by heavy winter rains.

NOTES: None of this species is reported in the CNDDB to occur in the Santa Rosa area. John Brode of the California Department of Fish and Game could not find any record of sightings of this species in the Santa Rosa area. Marginal habitats for this species are available near seeps and ponds within Southwest Area Plan boundaries. The presence of predatory fish in some ponds precludes their use for breeding by this species. Searches and seining of aquatic habitats during field surveys for this report failed to establish the presence adults or larvae of this toad within Southwest Area Plan boundaries.

*Clemmys marmorata marmorata*²

Western Pond Turtle

STATUS: -/CSC

HABITAT: Preferred habitats include ponds, marshes, rivers, streams and irrigation ditches with rocky or muddy bottoms. Food is mainly aquatic plants, insects, and carrion. Watercress, cattails and lillies are used for cover.

NOTES: Marginal habitats of type required by this species are available within Southwest Area Plan boundaries. None of this species was found during searches of aquatic habitats and farm ponds, located within Southwest Area Plan boundaries, during surveys for this report.

INVERTEBRATES

*Ischnura gemina*²

San Francisco Fork-tailed Damselfly

STATUS: FSC/-/

HABITAT: Completes its lifecycle in and near dense emergent vegetation on the margins of freshwater ponds, slow moving creeks, drainage ditches and seasonal wetlands at low elevations around San Francisco Bay region.

NOTES: Preliminary searches for this species and likely habitats for its existence were performed for this report. Some, marginal habitats were found within Southwest Area Plan boundaries but while adults and larvae of related species were identified none of this species was found. Intensive, timely surveys would be required to determine the presence of this species on the site.

*Hydrochara rickseckeri*²

Ricksecker's Water Scavenger Beetle

STATUS: none

HABITAT: Occurs in and near dense emergent vegetation on the margins of freshwater ponds, slow moving creeks, drainage ditches and seasonal wetlands at low elevations. Feeds largely on decaying animal and plant matter, but are sometimes predaceous upon other insects.

NOTES: Habitats of the type required by this species are present at a number of locations within Southwest Area Plan boundaries. Preliminary searches were performed during surveys for this

report by biologists familiar with the identification of this species and its likely habitats. None of this species was found. Intensive, timely surveys would be required to determine the presence of this species on the site.

Lindieriella occidentalis

California lindieriella

STATUS: FSC/-/

HABITAT: Completes its lifecycle in vernal pools, seasonal wetlands, drainage ditches and at low elevations around San Francisco Bay region.

NOTES: Suitable seasonal wetlands habitat of the type required by this species is present at a number of locations within Southwest Area Plan boundaries. Preliminary searches were performed during surveys for this report by biologists familiar with the identification of this species and its likely habitats. Observed in 1994 in the vicinity of the Santa Rosa Air Center 1.6 km. NE of the intersection of Ludwig Avenue and Wright Road, and 0.3 km. WNW of the intersection of Stony Point Road and Hearn Avenue.

Branchinecta lynchi

Vernal Pool Fairy Shrimp*

STATUS: FT/-/

HABITAT: Completes its lifecycle in vernal pools, seasonal wetlands, drainage ditches and at low elevations around San Francisco Bay region.

NOTES: Suitable seasonal wetlands habitat of the type required by this species is present at a number of locations within Southwest Area Plan boundaries. Preliminary searches were performed during surveys for this report by biologists familiar with the identification of this species and its likely habitats. None of this species was found. Intensive, timely surveys would be required to determine the presence of this species on the site.

¹ Sources:

Best, Catherine; J. T. Howell, W + I Knight, and Mary Wells. *A Flora of Sonoma County*. California Native Plant Society, 1996.

California Natural Diversity Data Base (CNDDB) current update June 10, 1993. Computer printout for four surrounding 7.5 minute quadrangle USGS maps in the project region (Santa Rosa, Sebastopol, Cotati, Two Rock).

Hunter, B., Regional Manager, Region 3, California Department of Fish and Game, "*FEMA*" Properties - Old Naval Air Center Southwest Santa Rosa, Sonoma County, Correspondence dated June 16, 1992.

Hunter, B., Regional Manager, Region 3, California Department of Fish and Game, Santa Rosa High-Frequency Radio Station Site, Correspondence dated April 22, 1993.

White, W. S., Field Supervisor, U.S. Fish and Wildlife Service, *Listed and Endangered and Threatened Species and Candidate Species that May Occur in the Area of the Proposed Southwest Santa Rosa Area Plan*, Correspondence dated September 29, 1992.

² = Habitat and/or resources required for reproduction/maintenance present within project boundaries.

Federal Status Listings

- FE Federal Endangered
- FT Federal Threatened
- FC Federal Candidate (a former Category 1 candidate) - a candidate for listing and enough data are on file to support Federal listing as endangered or threatened. State and Federal agencies and other parties are encouraged to give consideration to these taxa in environmental planning.
- FSC Federal Special Concern Species (a former Category 2 candidate) - threat or distribution data are insufficient to support listing at this time

California Status Listings

- SE State Endangered
- ST State Threatened
- SR State Rare (plants only)
- SC State Candidate for Listing
- CSC CDFG California Special Concern Species. Declining population levels, limited ranges, and/or continuing threats to these species have made them vulnerable to extinction. The goal of designating species as "Species of Special Concern" is to halt or reverse their decline by calling attention to their plight and addressing the issues of concern early enough to secure their long term viability.

CDFG Protected: Protected species may not be taken or possessed without a permit from the Fish and Game Commission and/or the Department of Fish and Game.

California Native Plant Society Inventory Lists

- List 1A - presumed extinct in California
- List 1B - plants are rare or endangered in California and elsewhere
- List 2 - plants are rare or endangered in California but more common elsewhere
- List 3 - plants for which more information is needed - a review list
- List 4 - plants of limited distribution - a watch list

Federal Status/State Status/CNPS List (plants only)

APPENDIX C

**COMMON, POTENTIAL AND OBSERVED
PLANT AND WILDLIFE SPECIES IN THE
SOUTHWEST SANTA ROSA PLAN AREA
SONOMA COUNTY, CALIFORNIA**

APPENDIX C

**COMMON, POTENTIAL AND OBSERVED
PLANT AND WILDLIFE SPECIES IN THE
SOUTHWEST SANTA ROSA PLAN AREA
SONOMA COUNTY, CALIFORNIA**

Common Name

Scientific Name

PLANTS

FERN ALLIES

Marsilea Family

Marsiliaceae

American Pilularia

* *Pilularia americana*

CONIFERS

CONIFEROPHYTA

Pine Family

Pinaceae

Monterey Pine

Pinus radiata

FLOWERING PLANTS

ANTHOPHYTA

Dicotyledons

Sumac Family

Anacardiaceae

Poison Oak

* *Toxicodendron diversilobum*

Carrot Family

Apiaceae

Coyote Thistle

Eryngium aristulatum

Sweet Fennel

Foeniculum vulgare

Lovage

Ligusticum sp.

Gairdner's Yampah

Perideridia gairdneri ssp. *gairdneri*

Common NameScientific Name**Sunflower Family**

Blow-wives
 Coyote Brush
 Baker's Blennosperma
 Italian-thistle
 Yellow Star-thistle
 Bull Thistle
 Tarweed
 Rough Cat's-ear
 Wild Lettuce
 Smooth Lasthenia
 Tidy Tips
 Pineapple Weed
 Bristly Ox-tongue
 Groundsel
 Milk Thistle
 Soliva
 Salsify
 Cocklebur
 Narrow-leaved Mules-ears
 Smooth Mules-ears

Birch Family

Red alder

Borage Family

Bracted Popcorn Flower
 Slender Popcorn Flower

Mustard Family

Mustard
 Wild Radish
 Yellow Cress
 Tumble Mustard

Water Starwort Family

Water Starwort

Bluebell Family

Fringed Downingia, Common Downingia

Asteraceae

Achyrrachaena mollis
Baccharis pilularis var. *consanguinea*
 * *Blennosperma bakeri*
Carduus pycnocephalus
Centaurea solstitialis
 * *Cirsium vulgare*
 * *Hemizonia* sp.
Hypochoeris radicata
Lactuca serriola
Lasthenia glaberrima
Layia sp.
 * *Matricaria matricarioides*
Picris echinoides
 * *Senecio vulgaris*
 * *Silybum marianum*
Soliva sessilis
Tragopogon porrifolius
 * *Xanthium strumarium*
Wyethia angustifolia
Wyethia glabra

Betulaceae

Alnus rubra

Boraginaceae

Plagiobothrys bracteatus
 * *Plagiobothrys tener*

Brassicaceae

Brassica sp.
Raphanus sativus
 * *Rorippa islandica*
 * *Sisymbrium* sp.

Callitrichaceae

* *Callitriche* sp.

Campanulaceae

Downingia concolor

Common NameScientific Name**Morning Glory Family**

Field Bindweed

Convolvulaceae*Convolvulus arvensis***Teasel Family**

Teasel

Dipsacaceae*Dipsacus* sp.**Spurge Family**

Doveweed, Turkey Mullein

Euphorbiaceae* *Eremocarpus setigerus***Legume Family**

Bird's-foot Trefoil

Annual Lupine

Bur Clover

Sweet Clover

Depauperate Clover

Sack Clover

Subterranean Clover

Tomcat Clover

Varigated Clover

Coast Clover

Vetch

Fabaceae*Lotus corniculatus**Lupinus bicolor**Medicago polymorpha** *Melilotus* sp.* *Trifolium depauperatum**Trifolium fucatum**Trifolium subterraneum**Trifolium tridentatum** *Trifolium variegatum**Trifolium wormskjoldii**Vicia* sp.**Oak Family**

Valley Oak

Fagaceae*Quercus lobata***Geranium Family**

Mediterranean Filaree

Red-stem Filaree

Cut-leaved Geranium

Geraniaceae*Erodium botrys**Erodium cicutarium**Geranium dissectum***Walnut Family**

California Black Walnut

English Walnut

Juglandaceae*Juglans hindsii**Juglans regia***Mint Family**

Henbit, Giraffe-heads

Pennyroyal

Douglas' Pogogyne

Lamiaceae*Lamium amplexicaule** *Mentha pulegium** *Pogogyne douglasii* var. *parviflora*

Common NameScientific Name**Meadowfoam Family**

Douglas' Meadowfoam
 Douglas' Meadowfoam
 Sebastopol Meadowfoam

Limnanthaceae

- * *Limnanthes douglasii* ssp. *nivea*
- Limnanthes douglasii* ssp. *rosea*
- Limnanthes vinculans*

Lythrum Family

Hyssop Loosestrife

Lythraceae

Lythrum hyssopifolia

Myrtle Family

Blue Gum

Myrtaceae

Eucalyptus globulus

Olive Family

Oregon Ash

Oleaceae

Fraxinus latifolia

Evening Primrose Family

Boisduvalia

Onagraceae

- * *Epilobium (Boisduvalia) sp.*

Poppy Family

California Poppy

Papaveraceae

Eschscholzia californica

Plantain Family

Narrow-leaved Plantain

Plantaginaceae

Plantago lanceolata

Buckwheat Family

Wiregrass
 Sheep Sorrel
 Curly Dock
 Dock

Polygonaceae

- * *Polygonum aviculare*
- Rumex acetosella*
- Rumex crispus*
- Rumex sp.*

Primrose Family

Scarlet Pimpernel

Primulaceae

Anagallis arvensis

Buttercup Family

California Buttercup
 Lobb's Aquatic Buttercup
 Prickle-fruited Buttercup
 Low Buttercup

Ranunculaceae

- Ranunculus californicus*
- * *Ranunculus lobbii*
- Ranunculus muricatus*
- * *Ranunculus pusillus*

Common NameScientific Name**Phlox Family**

Baker Navarretia

Navarretia leucocephala ssp. *bakeri***Rose Family**

Apple

Almond

Santa Rosa Plum

Pear

Himalaya Berry

Rosaceae*Malus sylvestris**Prunus amygdalus**Prunus salicina**Pyrus communis**Rubus discolor***Willow Family**

Fremont Cottonwood

Weeping Willow

Arroyo Willow

Salicaceae*Populus fremontii**Salix babylonica** *Salix lasiolepis***Figwort Family**

Bellardia

Sticky Monkeyflower

Common Monkeyflower

Tricolored Monkeyflower

Valley Tassels, Coyote Tail

Johnny Tuck

Smooth Orthocarpus

Owl's Clover

Yellow Parenticellia

Purslane Speedwell

Scrophulariaceae*Bellardia trixago**Mimulus aurantiacus**Mimulus guttatus**Mimulus tricolor**Orthocarpus attenuatus**Orthocarpus erianthus**Orthocarpus faucibarbatulus**Orthocarpus purpurascens**Parenticellia viscosa**Veronica peregrina*Monocotyledons**Sedge Family**

Sedge

Cyperaceae* *Carex* cf. *densa***Iris Family**

Iris

Blue-eyed Grass

Iridaceae*Iris* sp.*Sisyrinchium bellum*

Common NameScientific Name**Lily Family**

Brodiaea
 Soap Plant
 Blue Dicks
 Hyacinth-flowered Brodiaea
 Ithuriel's Spear

Liliaceae

Brodiaea sp.
Chlorogalum pomeridianum
Dichelostemma capitatum
Triteleia hyacinthina
Triteleia laxa

Rush Family

Spikerush
 Toad Rush
 Slender Rush
 Iris-leaved Rush
 Rushes

Juncaceae

Heleocharis spp.
Juncus bufonius
 * *Juncus tenuis*
Juncus siphoides
Juncus spp.

Arrow-grass Family

Flowering Quillwort

Juncaginaceae

Lilaea scilloides

Grass Family

Silver Hairgrass
 Slender Wild Oats
 Little Rattlesnake Grass
 Ripgut Brome
 Soft Chess
 Bermuda Grass
 California Oatgrass
 Creeping Wildrye
 Meadow Barley
 Alkali Barley
 Mediterranean Barley
 Farmers Foxtail, Hare Barley
 Barley
 Italian Rye grass
 Purple Needlegrass
 Gnawed Canary Grass
 California Beardgrass, Semaphore Grass
 Annual Bluegrass
 Rabbit-foot Grass
 Annual Fescue

Poaceae

Aira caryophyllea
Avena barbata
Briza minor
Bromus diandrus
Bromus hordaceus
 * *Cynodon dactylon*
Danthonia californica
 * *Elymus triticoides*
Hordeum brachyantherum
 * *Hordeum depressum*
Hordeum hystrix
Hordeum murinum ssp. *leporinum*
Hordeum vulgare
Lolium multiflorum
 * *Nassella pulchra*
Phalaris paradoxa
Pleuropogon californicus
 * *Poa annua*
Polypogon monspeliensis
Vulpia sp.

TOTAL

128

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Common NameScientific Name**MAMMALS**

Opossum	+ <i>Didelphis marsupialis</i>
Ornate Shrew	<i>Sorex ornatus</i>
Trowbridge's Shrew	<i>Sorex trobridgii</i>
Broad-footed Mole	+ <i>Scapanus latimanus</i>
California Myotis	<i>Myotis californicus</i>
Yuma Myotis	<i>Myotis yumanensis</i>
Long-eared Myotis	<i>Myotis evotis</i>
Fringed Myotis	<i>Myotis thysanodes</i>
Western Pipistrelle	<i>Pipistrellus hesperus</i>
Big Brown Bat	<i>Eptesicus fuscus</i>
Red Bat	<i>Lasiurus borealis</i>
Hoary Bat	<i>Lasiurus cinereus</i>
Townsend's Big-eared Bat	<i>Plecotus townsendii</i>
Pallid Bat	<i>Antrozous pallidus</i>
Brazilian Free-tailed Bat	<i>Tadarida brasiliensis</i>
Western Mastiff Bat	<i>Eumops perotis</i>
Raccoon	+ <i>Procyon lotor</i>
Bobcat	<i>Lynx rufus</i>
Feral House Cat	+ <i>Felis domesticus</i>
Gray Fox	+ <i>Urocyon cinereoargenteus</i>
Red Fox	+ <i>Vulpes vulpes</i>
Coyote	+ <i>Canis latrans</i>
Long-tailed Weasel	<i>Mustela frenata</i>
Mink	<i>Mustela vison</i>
Badger	<i>Taxidea taxus</i>
Striped Skunk	+ <i>Mephitis mephitis</i>
Spotted Skunk	<i>Spilogale putorius</i>
California Ground Squirrel	+ <i>Spermophilus beecheyi</i>
Sonoma Chipmunk	<i>Tamias sonomae</i>
Western Gray Squirrel	<i>Sciurus griseus</i>
Botta's Pocket Gopher	+ <i>Thomomys bottae</i>
California Kangaroo Rat	<i>Dipodomys californicus</i>
Western Harvest Mouse	<i>Reithrodontomys megalotis</i>
Deer Mouse	+ <i>Peromyscus maniculatus</i>
Pinon Mouse	<i>Peromyscus truei</i>
Dusky-footed Wood Rat	<i>Neotoma fuscipes</i>
California Vole	+ <i>Microtus californicus</i>
Norway Rat	<i>Rattus norvegicus</i>
House Mouse	+ <i>Mus musculus</i>
Blacktail Jackrabbit	+ <i>Lepus californicus</i>
Brush Rabbit	<i>Sylvilagus bachmani</i>
Mule Deer	<i>Odocoileus hemionus</i>

TOTAL

14

Common NameScientific Name**REPTILES AND AMPHIBIANS**

California Tiger Salamander	+ <i>Ambystoma tigrinum californiense</i>
Pacific Giant Salamander	<i>Dicamptodon ensatus</i>
Rough-skinned Newt	<i>Taricha granulosa</i>
Red-bellied Newt	<i>Taricha rivularis</i>
Ensatina	<i>Ensatina eschscholtzi xanthoptica</i>
California Slender Salamander	+ <i>Batrachoseps attenuatus</i>
Arboreal Salamander	<i>Aneides lugubris</i>
Western Toad	<i>Bufo boreas</i>
Pacific Chorus Frog (Treefrog)	+ <i>Pseudacris (hyla) regilla</i>
California Red-legged Frog	<i>Rana aurora draytonii</i>
Foothill Yellow-legged Frog	<i>Rana boylei</i>
Bullfrog	<i>Rana catesbeiana</i>
Western Pond Turtle	<i>Clemmys marmorata marmorata</i>
Western Fence Lizard	+ <i>Sceloporus occidentalis</i>
Sagebrush Lizard	<i>Sceloporus graciosus</i>
Western Skink	<i>Eumeces skiltonianus</i>
Southern Alligator Lizard	+ <i>Gerrhonotus multicarinatus</i>
Northern Alligator Lizard	<i>Gerrhonotus coeruleus</i>
Rubber Boa	<i>Charina bottae</i>
Ringneck Snake	<i>Diadophis punctatus</i>
Sharp-tailed Snake	<i>Contia tenuis</i>
Racer	<i>Coluber constrictor</i>
Striped Racer	<i>Masticophis lateralis</i>
Pacific Gopher Snake	+ <i>Pituophis melanoleucus</i>
Common Kingsnake	+ <i>Lampropeltis getulus</i>
Western Terrestrial Garter Snake	<i>Thamnophis elegans terrestris</i>
Western Aquatic Garter Snake	+ <i>Thamnophis couchi aquaticus</i>
Common Garter Snake	+ <i>Thamnophis sirtalis infernalis</i>
Western Rattlesnake	<i>Crotalus viridis</i>
TOTAL	9

BIRDS

Great Blue Heron	+ <i>Ardea herodias</i>
Green-backed Heron	+ <i>Butorides striatus</i>
Black-crowned Night-Heron	<i>Nyctanassa violacea</i>
American Egret	+ <i>Casmerodius albus</i>
Snowy Egret (w)	<i>Egretta thula</i>
Mallard	+ <i>Anas platyrhynchos</i>
Turkey Vulture	+ <i>Cathartes aura</i>
White-tailed (Black-shouldered) Kite	+ <i>Elanus leucurus</i>
Cooper's Hawk	<i>Accipiter cooperi</i>

<u>Common Name</u>	<u>Scientific Name</u>
Sharp-shinned Hawk (w)	+ <i>Accipiter striatus</i>
Northern Harrier (w)	<i>Circus cyaneus</i>
Red-tailed Hawk	+ <i>Buteo jamaicensis</i>
Red-shouldered Hawk	+ <i>Buteo lineatus</i>
Swainson's Hawk	<i>Buteo swainsoni</i>
Golden Eagle	<i>Aquila chrysaetos</i>
Bald Eagle (w)	<i>Haliaeetus leucocephalus</i>
American Kestrel	+ <i>Falco sparverius</i>
Merlin (w)	<i>Falco columbarius</i>
American Peregrine Falcon	<i>Falco peregrinus anatum</i>
Prairie Falcon (w)	<i>Falco mexicanus</i>
California Quail	+ <i>Callipepla californica</i>
Ring-necked Pheasant	+ <i>Phasianus colchicus</i>
American Coot	<i>Fulica americana</i>
California Gull	<i>Larus californicus</i>
Ring-billed Gull	<i>Larus delawarensis</i>
Mourning Dove	+ <i>Zenaidura macroura</i>
Band-tailed Pigeon	<i>Columba fasciata</i>
Rock Dove	+ <i>Columba livia</i>
Killdeer	+ <i>Charadrius vociferus</i>
Western Screech Owl	<i>Otus asio</i>
Great Horned Owl	<i>Bubo virginianus</i>
Northern Pigmy Owl	<i>Glaucidium gnoma</i>
Barn Owl	+ <i>Tyto alba</i>
Burrowing Owl	* <i>Athene cunicularia hypugea</i>
Northern Spotted Owl	<i>Strix occidentalis caurina</i>
Long-eared Owl	<i>Asio otus</i>
Short-eared Owl	* <i>Asio flammeus</i>
Northern Saw-whet Owl	<i>Aegolius acadicus</i>
Poor-will (s)	<i>Phalaenoptilus nuttalli</i>
White-throated Swift	<i>Aeronautes saxatalis</i>
Vaux's swift (s)	<i>Chaetura vauxi</i>
Anna's Hummingbird	+ <i>Calypte anna</i>
Allen's Hummingbird (s)	<i>Selasphorus sasin</i>
Belted Kingfisher	<i>Ceryle alcyon</i>
Northern Flicker	+ <i>Colaptes auratus</i>
Pileated Woodpecker	<i>Dryocopus pileatus</i>
Acorn Woodpecker	+ <i>Melanerpes formicivorus</i>
Lewis' Woodpecker (w)	<i>Melanerpes lewis</i>
"Red-breasted" Sapsucker (w)	<i>Sphyrapicus varius daggetti</i>
Nuttall's Woodpecker	+ <i>Picoides nuttalli</i>
Downy Woodpecker	+ <i>Picoides pubescens</i>
Hairy Woodpecker	<i>Picoides villosus</i>
Western Kingbird (s)	+ <i>Tyrannus verticalis</i>
Ash-throated Flycatcher (s)	<i>Myiarchus cinerascens</i>
Black Phoebe	+ <i>Sayornis nigricans</i>
Say's Phoebe (w)	<i>Sayornis saya</i>
Pacific-slope Flycatcher (s)	+ <i>Empidonax difficilis</i>

Common NameScientific Name

Western Wood Pewee (s)	<i>Contopus sordidulus</i>
Olive-sided Flycatcher (s)	<i>Nuttallornis obrealis</i>
California Horned Lark	<i>Eremophila alpestris actia</i>
Barn Swallow (s)	+ <i>Hirundo rustica</i>
Cliff Swallow (s)	+ <i>Petrochelidon pyrrhonota</i>
Violet-green Swallow	+ <i>Tachycineta thalassina</i>
Tree Swallow	<i>Iridoprocne bicolor</i>
Northern Rough-winged Swallow (s)	+ <i>Stelgidopteryx ruficollis</i>
Purple Martin (s)	<i>Progne subis</i>
Western Scrub Jay	+ <i>Aphelocoma coerulescens</i>
Steller's Jay	+ <i>Cyanocitta stelleri</i>
Yellow-billed Magpie	* <i>Pica nuttalli</i>
American Crow	+ <i>Corvus brachyrhynchos</i>
Common Raven	+ <i>Corvus corax</i>
Chestnut-backed Chickadee	<i>Parus rufescens</i>
Common Bushtit	+ <i>Psaltiriparus minimus</i>
Oak (Plain) Titmouse	<i>Psaltiriparus inornatus</i>
White-breasted Nuthatch	<i>Sitta carolinensis</i>
Red-breasted Nuthatch (w)	<i>Sitta canadensis</i>
Brown Creeper	<i>Certhia americana</i>
Wrentit	<i>Chamaea fasciata</i>
Bewick's Wren	+ <i>Thryomanes bewickii</i>
House Wren	<i>Troglodytes aedon</i>
Winter Wren (w)	<i>Troglodytes troglodytes</i>
Marsh Wren	<i>Cistothorus palustris</i>
Rock Wren	<i>Salpinctes obsoletus</i>
Northern Mockingbird	+ <i>Mimus polyglottos</i>
California Thrasher	<i>Toxostoma redivivum</i>
American Robin	+ <i>Turdus migratorius</i>
Varied Thrush (w)	<i>Ixoreus naevius</i>
Hermit Thrush (w)	<i>Catharus guttata</i>
Swainson's Thrush (s)	<i>Catharus ustulatus</i>
Western Bluebird	<i>Sialia mexicana</i>
Blue-gray Gnatcatcher (s)	<i>Poliophtila caerulea</i>
Ruby-crowned Kinglet (w)	<i>Regulus calendula</i>
Golden-crowned Kinglet (w)	<i>Regulus satrapa</i>
American Pipit (w)	<i>Anthus spinoletta</i>
Cedar Waxwing (w)	<i>Bombycilla cedrorum</i>
Loggerhead Shrike	+ <i>Lanius ludovicianus</i>
European Starling	+ <i>Sturnus vulgaris</i>
Hutton's Vireo	<i>Vireo huttoni</i>
Solitary Vireo (s)	<i>Vireo solitarius</i>
Warbling Vireo (s)	<i>Vireo gilvus</i>
Orange-crowned Warbler	<i>Vermivora celata</i>
Yellow-rumped Warbler	<i>Dendroica coronata</i>
Yellow Warbler (s)	<i>Dendroica petechia</i>
Townsend's Warbler (w)	<i>Dendroica townsendi</i>
Hermit Warbler (s)	<i>Dendroica occidentalis</i>

<u>Common Name</u>	<u>Scientific Name</u>
Salt Marsh Yellowthroat	<i>Geothlypis trichas</i>
Yellow-breasted Chat (s)	<i>Icteria virens</i>
Wilson's Warbler (s)	<i>Wilsonia pusilla</i>
Macgillivray's Warbler (s)	<i>Oporornis tolmiei</i>
Common Yellowthroat	<i>Geothlypis trichas</i>
Saltmarsh Yellowthroat	<i>Geothlypis trichas sinuosa</i>
Yellow-breasted Chat (s)	<i>Icteria virens</i>
Wilson's Warbler (s)	<i>Wilsonia pusilla</i>
House Sparrow	+ <i>Passer domesticus</i>
Yellow-headed Blackbird (w)	<i>Xanthocephalus xanthocephalus</i>
Red-winged Blackbird	+ <i>Agelaius phoeniceus</i>
Tricolored Blackbird	<i>Agelaius tricolor</i>
Brewer's Blackbird	+ <i>Euphagus cyanocephalus</i>
Brown-headed Cowbird	+ <i>Molothrus ater</i>
Northern Oriole (s)	+ <i>Icterus galbula</i>
Hooded Oriole (s)	<i>Icterus cucullatus</i>
Western Meadowlark	+ <i>Sturnella neglecta</i>
Western Tanager (s)	<i>Piranga ludoviciana</i>
Black-headed Grosbeak (s)	<i>Pheucticus melanocephalus</i>
Lazuli Bunting (s)	<i>Passerina amoena</i>
Evening Grosbeak (w)	<i>Coccothraustes vespertinus</i>
Purple Finch	<i>Carpodacus purpureus</i>
House Finch	+ <i>Carpodacus mexicanus</i>
Pine Siskin	<i>Spinus pinus</i>
American Goldfinch	<i>Spinus tristis</i>
Lesser Goldfinch	+ <i>Spinus psaltria</i>
Spotted (Rufous-sided) Towhee	+ <i>Pipilo erythrophthalmus</i>
California Towhee	+ <i>Pipilo fuscus</i>
Savannah Sparrow	<i>Passerculus sandwichensis</i>
Vesper Sparrow	<i>Pooecetes eramineus</i>
Lark Sparrow	<i>Chondestes grammacus</i>
Rufous-crowned Sparrow	<i>Aimophila ruficeps</i>
Grasshopper Sparrow (s)	<i>Ammodramus savannarum</i>
Sage Sparrow	<i>Amphispiza belli</i>
Dark-eyed Junco	<i>Junco hyemalis</i>
Chipping Sparrow (s)	<i>Spizella passerina</i>
White-crowned Sparrow (w)	+ <i>Zonotrichia leucophrys</i>
Golden-crowned Sparrow (w)	+ <i>Zonotrichia atricapilla</i>
Fox Sparrow (w)	<i>Passerella iliaca</i>
Lincoln's Sparrow (w)	<i>Melospiza lincolnii</i>
Song Sparrow	+ <i>Melospiza melodia</i>
TOTAL	54

All listed plant species recorded during field surveys May 4-6, 1993, or reliably reported (*).

Wildlife species observed during field surveys May 10-14, and June 7, 1993 (+) or reliably reported. See also Southwest Santa Rosa Master Environmental Assessment, LSA, April, 1991, Appendix D, Breeding Birds in the Study Area, and Appendix E, The Birds of Broadmoor Acres and Vicinity.

(w) = Winter range only

(s) = Summer range only

Sources: Grenfell, W.E., Jr., and W.F. Laudenslayer, Jr., eds., 1983. *The distribution of California birds. California Wildlife/Habitat Relationships Program. Publ. #4.* Calif. Dept. Fish and Game, Sacramento, and USDA For. Serv., San Francisco, CA.

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